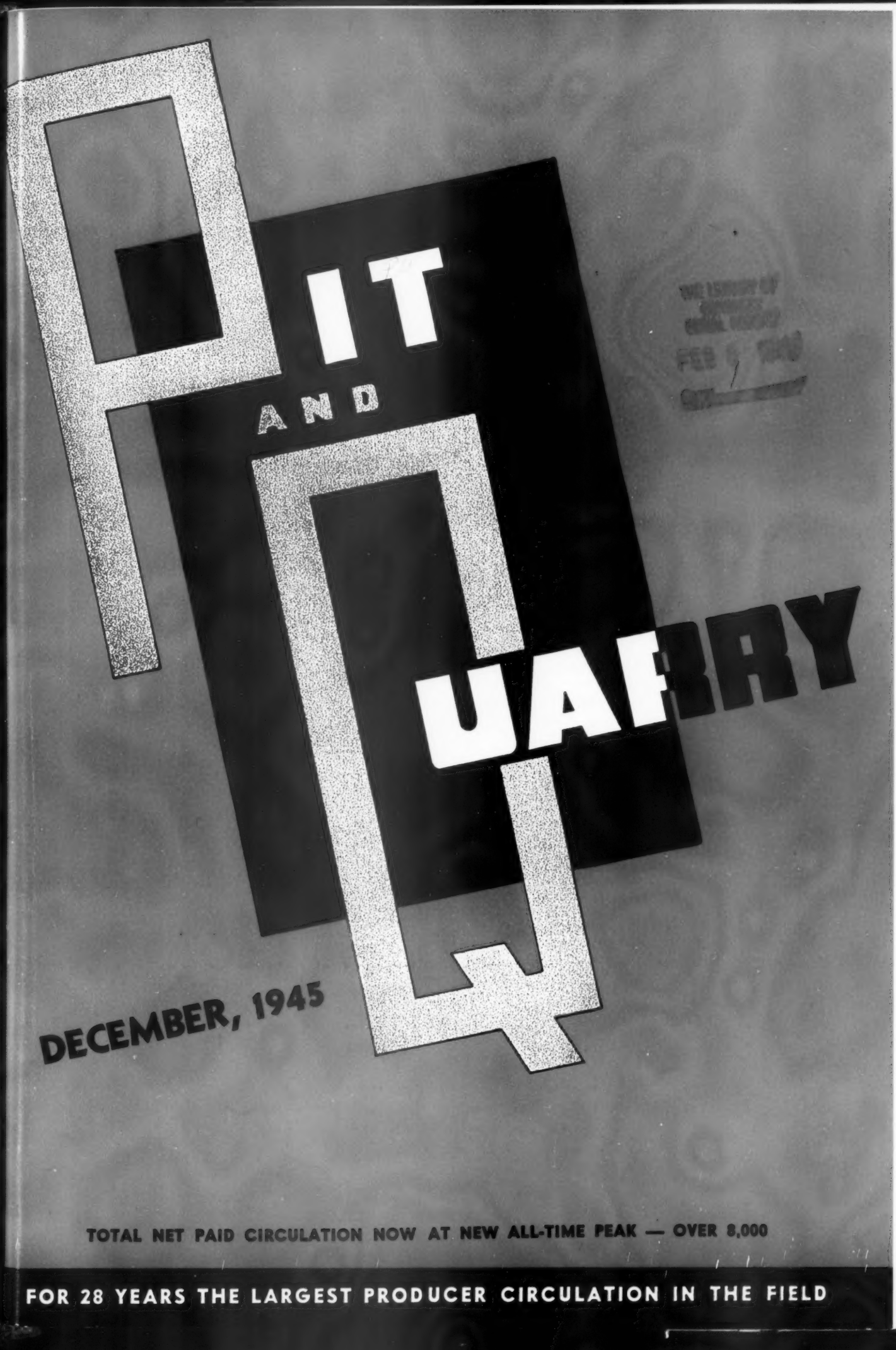
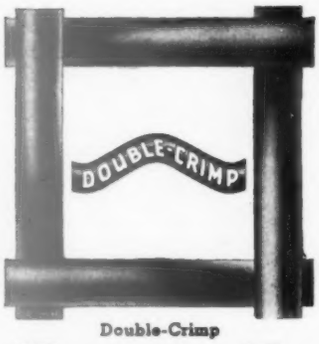

IT
AND
UARRY
DECEMBER, 1945
TOTAL NET PAID CIRCULATION NOW AT NEW ALL-TIME PEAK — OVER 8,000
FOR 28 YEARS THE LARGEST PRODUCER CIRCULATION IN THE FIELD

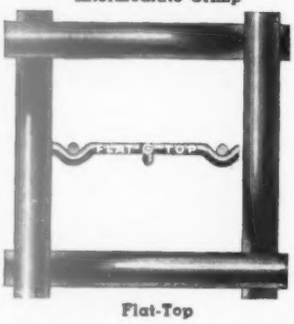
FEB -2 1946



Double-Crimp

Arch-Crimp

Intermediate-Crimp



Flat-Top

"The Perfect"

Wire Cloths and Screens

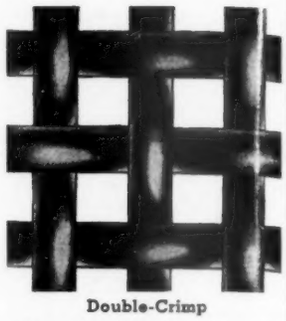
We have been specialists for many years in the making of precision wire cloths, wire screens and woven wire products.

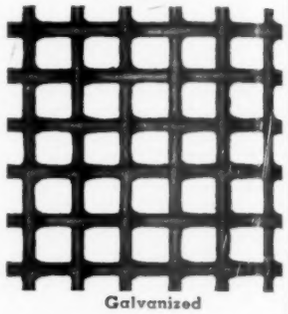
We apply our same precision principles in fabricating wire cloths into finished industrial units, for production or processing equipments or for permanent parts of countless industrial products.

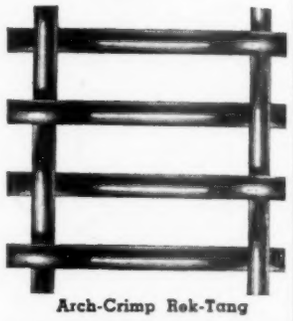
We invite your inquiries for wire cloths of all commercial metals or alloys or weaves, in continuous lengths or cut to size, or processed to meet your individual requirements.

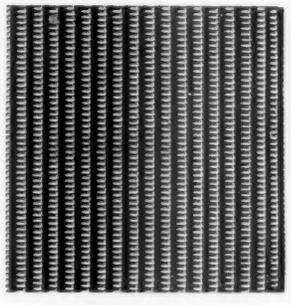
"Perfect" alloys and metals	"Perfect" Wire Cloth weaves	"Perfect" Wire Cloth Processing	"Perfect" Wire Cloth products
Super-Loy	Arch-Crimp	Bending	Baskets
Steel	Coiled	Binding	Circles
Galvanized	Double-Crimp	Brazing	Cones
Tinned	Double-Fill	Calendering	Crates
Stainless Steel	Dutch	Clinching	Cylinders
Nickel-Chromium alloys	Filter	Cutting	Discs
Aluminum	Flat-Top	Dipping	Forms
Brass	Herringbone-Twill	Dishing	Leaves
Bronze	Intermediate-crimp	Flanging	Lengths
Commercial Phosphor	Rek-Tang	Flattening	Panels
Copper	Selvage-Edge	Forming	Pieces
Monel Metal	Straight-Warp	Framing	Racks
Nickel	Stranded	Galvanizing	Ribbons
Any special alloys available in rod or wire form	Sta-Tru	Painting	Rolls
	Triple-Warp	Shearing	Sections
	Twilled	Slitting	Segments
	Twisted-Fill	Trimming	Spaces
	Twisted-Warp	Arc-Welding	Strips
		Gas-Welding	Template shapes
		Spot-Welding	Trays

We will follow your specifications and blue-prints exactly as your production engineers have prepared them—or we will submit suggestions for your approval.


Double-Crimp


Galvanized

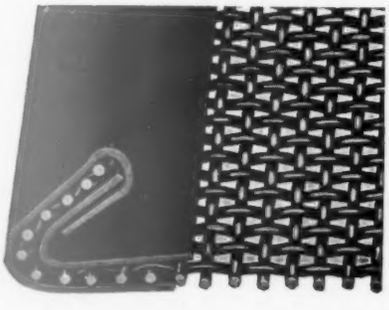

Arch-Crimp Rek-Tang


Dutch Weave

The LUDLOW-SAYLOR WIRE COMPANY

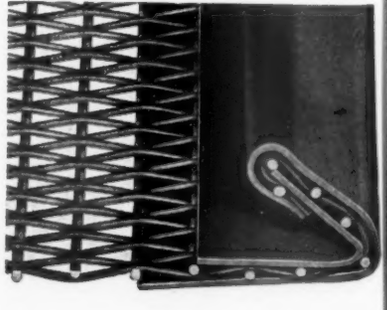
Newstead Avenue & Wabash Railroad

ST. LOUIS 10, MO.



LUDLOW-SAYLOR PRECISION FABRICATING makes vibrating-screen decks and jackets that are easily handled — quickly installed — need fewer adjustments and renewals.

Illustrations suggest only a few of the many available types of wire cloths and woven wire screens, which may be custom-finished with attachments to fit your particular processing installations.



ALL FROM ONE SOURCE

LINK-BELT

CHAINS, CONVEYING & ELEVATING UNITS, POWER TRANSMISSION MACHINERY

● As specialists in the design, manufacture and application of materials handling and power transmission machinery for all industries, Link-Belt engineers have learned how to apply an extensive knowledge and experience, effectively, to the solution of all kinds of materials handling and power transmitting problems. Some of the many Link-Belt products are here illustrated. Let Link-Belt engineers recommend the types of chains, conveyors, preparation equipment or power transmission machinery which will assure the most efficient production. Send for catalogs.

LINK-BELT COMPANY Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and distributors in principal cities. 9785-D

PIT AND QUARRY, December, 1945, Vol. 38, No. 6. Published monthly by the Complete Service Publishing Company, 538 South Clark Street, Chicago 5, Ill. Subscription price $2 for 1 year in the U. S. and possessions, Canada, Central and South America; elsewhere $1 additional for each year. Single copies 25 cents. Entered as second-class matter February 28, 1933, at the Post Office at Chicago, Ill., under the Act of March 3, 1897.

What Makes this Upson-Walton Hoist Hook a Better Hoist Hook?

UPSON-WALTON newly designed hoist hooks, unlike the old blacksmith-type round hooks, are *engineered to give better service longer and sustain a much heavier safe working load.* Check these specifications.

FINE GRAIN HIGHER TENSILE STEELS are used exclusively in Upson-Walton hoist hooks which are all *Drop Forged.*

ALL U-W HOIST HOOKS ARE HEAT TREATED at closely controlled temperatures to achieve greater strength, toughness and uniformity.

U-W HOOKS ARE UNIFORMLY DESIGNED WITH HEAVIER SECTIONS—another feature which permits greater safe working loads.

LARGER EYE OPENINGS give more room for connections; because of this and the extra strength of U-W hooks, it is often possible to use a smaller hook, thereby lowering cost.

REINFORCED SECTION AT EYE CROWN helps prevent collapse, gives longer wear at point of contact with the connection.

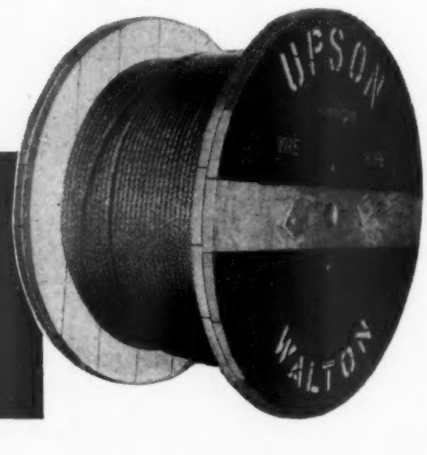
BIGGER THROAT OPENINGS . . . EASY ENGAGEMENT—U-W hooks are designed with increased throat openings; tip contour also makes it easy to hook them on.

AS WE GO TO PRESS, DELIVERIES ON MOST SIZES OF UPSON-WALTON HOIST HOOKS ARE GOOD.

U-W

Established 1871

Copyright 1945—
The Upson-Walton Company

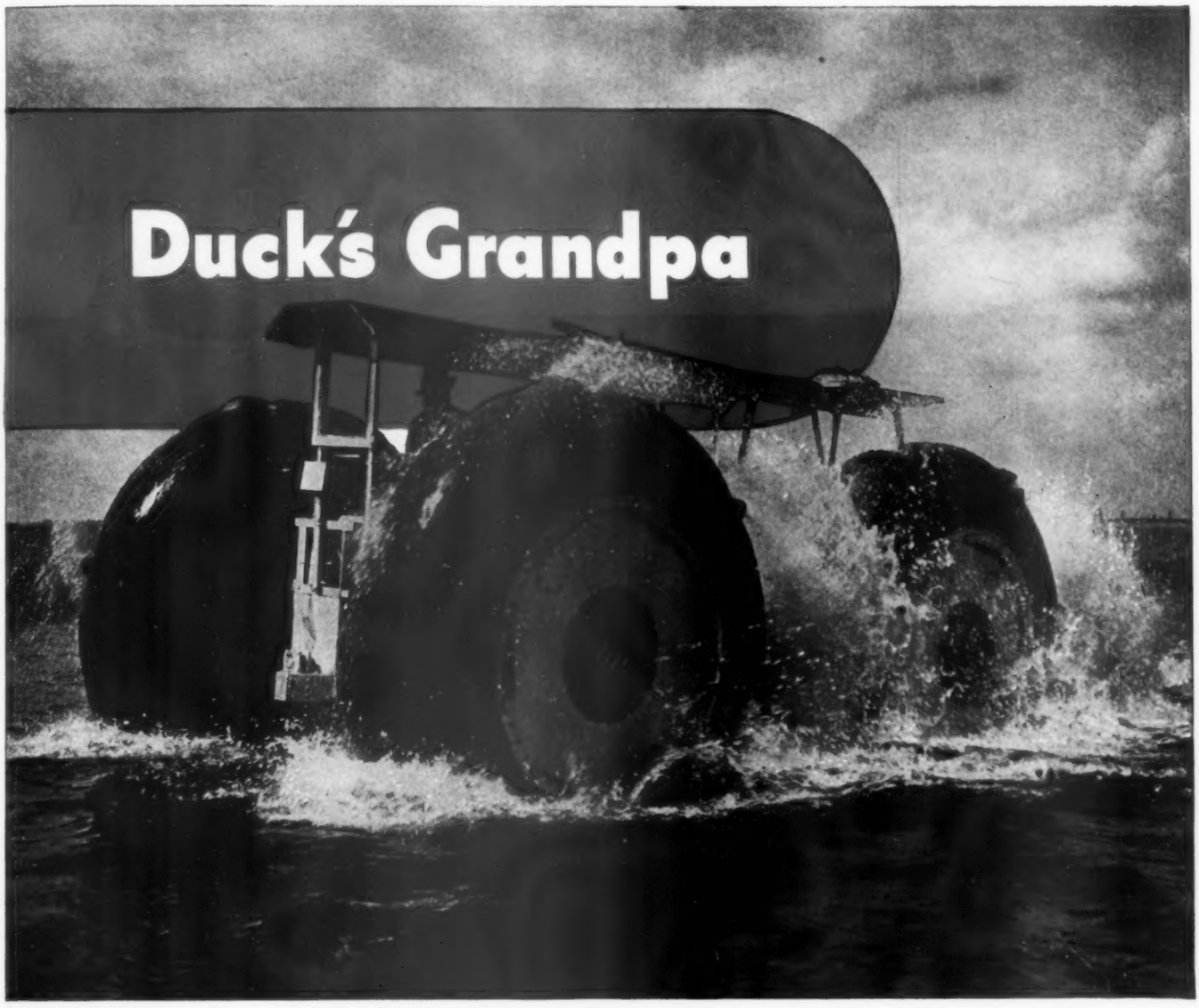


THE UPSON-WALTON COMPANY

Manufacturers of Wire Rope, Wire Rope Fittings, Tackle Blocks

MAIN OFFICES AND FACTORY: CLEVELAND 13, OHIO

114 Broad Street, New York 4 — 737 W. Van Buren Street, Chicago 7 — 241 Oliver Building, Pittsburgh 22



MEET the grandfather of today's "Ducks," "Weasels" and other amphibious military vehicles—born 10 years ago when Gulf Oil Corporation geophysicists decided to search for oil deposits in Florida and Louisiana swamps.

To get men and test instruments into that soft, gooey marshland, Gulf engineers, with Goodyear development men assisting on the tire-and-wheel plans, designed the vehicle you see above — a self-powered "marsh buggy" shod with big Goodyear balloon tires cross-strapped with lengths of hose that act as traction chains in mud, as paddles in water.

These big Goodyears support and move full loads over dry land and marshland — keep the buggy from sinking into mud and ooze. Equally important, they're sized and calculated for full flotation. More than 3 times larger than car tires, but carrying only 1/10 the air pressure, these big babies are motive water wings, too—buoyant enough to float the buggy and its load when deep water is encountered.

This example of job-engineering adds further proof of Goodyear's ability to build the right tire for any job. For construction work, Goodyear off-the-road tires are designed and built to meet the needs of special operations — the great Sure-Grip for drive wheels, the super-tough Hard Rock Lug for rock work, and the time-proved All-Weather Earth-Mover for general purpose vehicles.

And because these 3 big Goodyears deliver top performance and lower costs-per-ton-mile, they're first choice with cost-wise contractors everywhere. Why not buy — and specify — Goodyears on *your* units?

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

Sure-Grip, All-Weather—T. M.'s The Goodyear Tire & Rubber Company

HERE'S THE HEADLINER

for holding power

This truck will serve longer with less servicing because of the Elastic Stop Nuts on drive-shaft, cab supports, pedal shafts, engine supports and other parts.

THE ELASTIC *Self-Locking* STOP NUT USES ITS HEAD

Making headline news among sales executives the country over is the Elastic Self-Locking Stop Nut, the nut with the famous red collar.

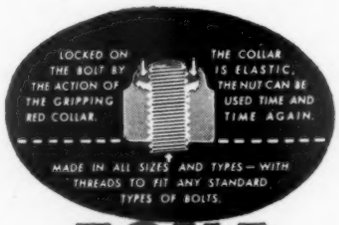
For sales executives are quick to recognize top-merit features that add sales appeal and widen public acceptance. The nut with the red collar, the hold-fast nut, adds value to trucks, passenger cars, vacuum cleaners, lawn mowers, radios and a host of other things because it assures longer, trouble-free service.

In industry, in the home, in office, factory and on the farm, red-collar nuts are finding thousands of new applications—holding fast wherever vibration, shock, impact or other loosening influences could cause trouble of any sort, from individual annoyance to multiple fatalities. They simply won't come loose. Not until you take a wrench and deliberately remove them. Then they turn off readily, for the metal threads are sealed-free of rust.

Tough and resilient, the red collar is unthreaded and gauged slightly smaller than the bolt. Bolt threads force their way in, do not cut, and a friction grip is set up. This overcomes the effects of vibration and other loosening forces—and because the collar retains its gripping power, the nuts may be used over and over again.

An application engineer will be glad to call on you and discuss ways Elastic Self-Locking Stop Nuts can help you.

LOOK FOR THE RED COLLAR
THE SYMBOL OF SECURITY


LOCKED ON THE BOLT BY THE ACTION OF THE GRIPPING RED COLLAR.
THE COLLAR IS ELASTIC, THE NUT CAN BE USED TIME AND TIME AGAIN.
MADE IN ALL SIZES AND TYPES—WITH THREADS TO FIT ANY STANDARD TYPES OF BOLTS.

ESNA
TRADE MARK

ELASTIC STOP NUT CORPORATION OF AMERICA
Union, New Jersey

...a peek into the future—

two brand new asphalt plants

for the bigger jobs —

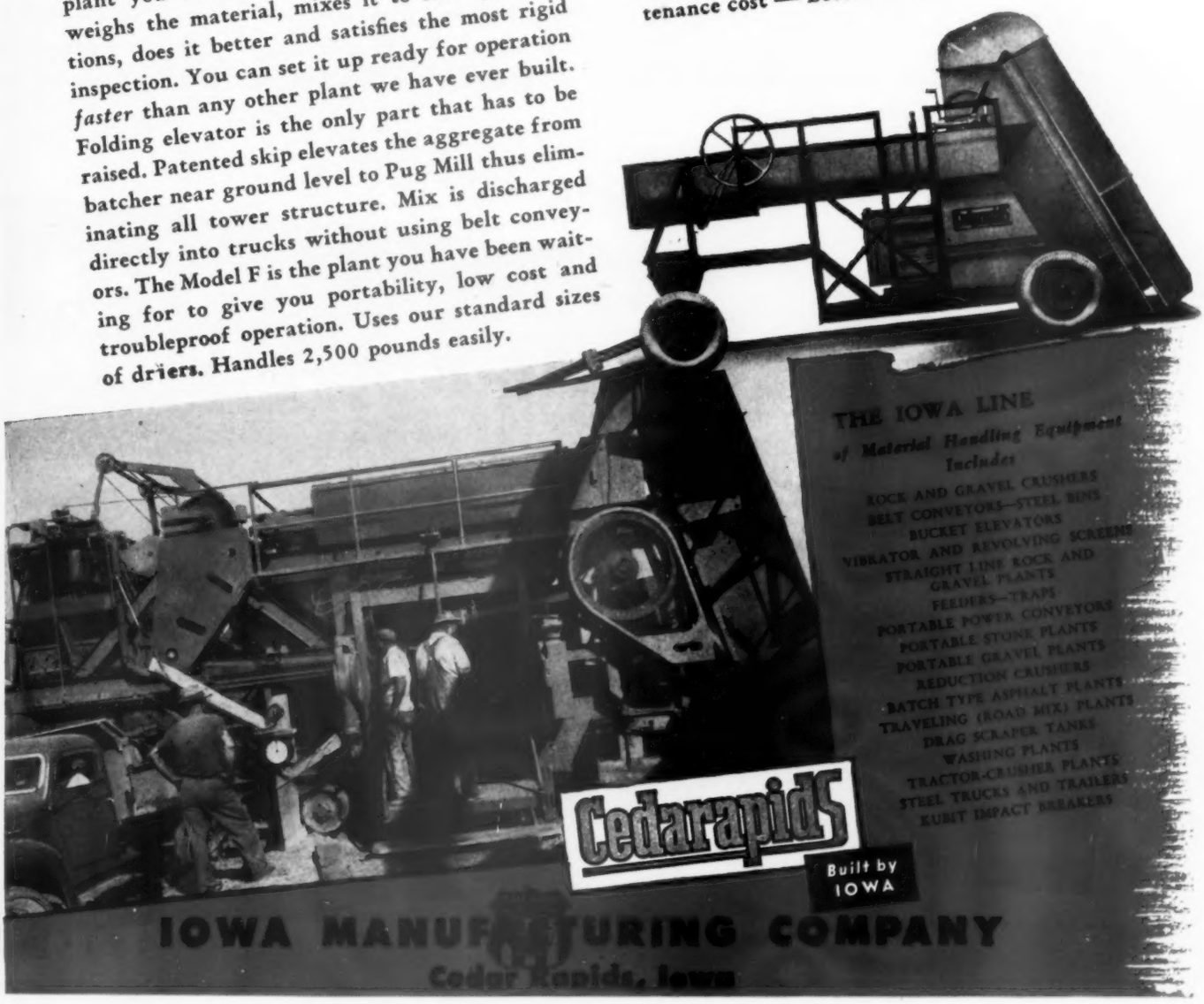
THE MODEL "F" (batch type)

Here's the most portable, 2,000 lb. batch type plant you ever saw. It grades the aggregate, weighs the material, mixes it to suit specifications, does it better and satisfies the most rigid inspection. You can set it up ready for operation *faster* than any other plant we have ever built. Folding elevator is the only part that has to be raised. Patented skip elevates the aggregate from batcher near ground level to Pug Mill thus eliminating all tower structure. Mix is discharged directly into trucks without using belt conveyors. The Model F is the plant you have been waiting for to give you portability, low cost and troubleproof operation. Uses our standard sizes of driers. Handles 2,500 pounds easily.

for the smaller jobs —

THE PATCHMASTER (continuous-mix type)

Its name describes it perfectly — the ideal machine for making patch material for anybody's paved roads or streets — anywhere. The Patchmaster is a continuous-mix type plant that will turn out a remarkably accurate mix at the rate of 25 to 30 tons per hour. Available with or without running gear, or drier, this new plant can be used as a portable or stationary plant to meet practically any plant mix problem. Gasoline or diesel engine or electric motor for power. Low priced — Low maintenance cost — Better mixes.



✓ HELPS SET

You'll be surprised how many ways—
in how many departments Socony-Vacuum's
Complete Lubrication Service for Contractors
saves time and work—helps you win
your constant race against deadlines!

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates:
Magnolia Petroleum Co., General Petroleum Corp. of Calif.

NEW RECORDS

● Fewer machine breakdowns—more continuous plant operation . . . you get these advantages and many more when you use Socony-Vacuum's *Complete* Lubrication Service! From quality products to expert "trouble-shooting," every detail of this service is designed to speed operations.

The completeness of our line guarantees you exactly the right oil or grease for *every* application . . . eliminates the need for special orders.

In addition, your Socony-Vacuum Representative arranges regular on-the-job deliveries . . . fits tested maintenance schedules to your own requirements . . . offers practical help with "problem" equipment . . . calls in engineering aid, when needed! He'll also show your men the newest time-saving lubricating techniques.

When you can get really *Complete* Lubrication Service, why be satisfied with just "gas and oil"! Call in Socony-Vacuum today.

"ON YOUR STAFF—BUT NOT ON YOUR PAYROLL"—
Your Socony-Vacuum Representative

CORRECT LUBRICATION FOR EVERY PART OF EVERY MACHINE YOU OPERATE . . .
PLUS
1 ENGINEERING HELP on time-losing operating problems; 2 TESTED MAINTENANCE SCHEDULES that minimize service man-hours—keep equipment on the job; 3 PROMPT, DEPENDABLE DELIVERY—a reliable, on-the-job service that eliminates inventory problems for you!

TUNE IN "INFORMATION PLEASE"—MONDAY EVENINGS, 9:30 E. S.T.—NBC

SIGNS WHICH POINT TO CEMENT'S GREATEST YEAR

SIGN #1

During 1946, it is estimated* that $138,000,000 will be spent on cement alone for the construction and repair of the streets and highways of this country. This does not take into account the cement which will be used for sewer and water installations, or for the construction of schools, hospitals, industrial buildings, and hundreds of thousands of private homes.

* Estimated by H. E. Foreman, Managing Director Associated Contractors of America.

SIGN #2

Reconversion by the manufacturers of cement making machinery and equipment has, generally speaking, been a simple problem. A wider range of machinery capacities is coming available and entirely new units of machinery have been developed during the war*.

* Rock Products Magazine investigation August 20th, 1945.

SIGN #3

Multiwall Paper Bags – the ideal cement package – will also be available in greater quantities during 1946. This is because more and more shipments of wood pulp are arriving in this country.

In addition, the increasing availability of manpower is now enabling St. Regis to plan greater Multiwall Bag production for the most efficient and economical packaging of cement and all kindred products.

St. Regis MULTIWALL PAPER BAGS

MULTIPLY PROTECTION • MULTIPLY SALEABILITY

ST. REGIS PAPER COMPANY

TAGGART CORPORATION

NEW YORK 17: 230 Park Ave. CHICAGO 1: 230 No. Michigan Ave.
BALTIMORE 2: 2601 O'Sullivan Bldg. SAN FRANCISCO 4: 1 Montgomery St.

IN CANADA:
St. Regis Paper Co. (Can.) Ltd.
Montreal, Quebec
Vancouver, British Columbia

Birmingham Boston Cleveland Dallas Denver Detroit Franklin, Va.
Los Angeles Nazareth, Pa. New Orleans No. Kansas City, Mo. Seattle Toledo

RESULTS MEAN PROFITS

Every operator is interested in the profit he makes. Therefore, he needs machinery in his plant that will produce the results which mean profits to him.

That is why Traylor Compartment Mills "fill the bill." They have built into them the very features that operators demand for results:

1. There is a size to fit your needs. They are built in one, two, three or four compartments, in sizes up to 8′-0″ dia. x 50′-0″, depending upon the work to be done.

2. They are sturdily constructed to stand up under severe and continuous service. There is a full welded steel shell; extra long trunnions of large diameter; heavy support bearings; reversible cut gearing for positive action and quiet running.

3. Whatever the fineness of the product desired, be it 99% through a minus 325 mesh screen or 100% through a minus 200 mesh screen, these machines deliver the required amount hour after hour.

4. They operate economically and require very little attention by the machine attendant.

All of these add up to the "EFFICIENCY" for which Traylor Compartment Mills are noted and which makes them preferred by many in the cement and metallurgical industries because the results they produce mean profits to the user.

Investigate this mill. Our representative will be glad to come at your convenience to discuss it with you. Or write for further details.

WE BUILD

Kilns
Coolers
Dryers
Slakers
Scrubbers
Jaw Crushers
Gyratory Crushers
Reduction Crushers
Crushing Rolls
Ball Mills
Rod Mills
Wash Mills
Feeders

TRAYLOR
ENGINEERING & MANUFACTURING CO.
MAIN OFFICE AND WORKS — ALLENTOWN, PENNA., U.S.A.

NEW YORK CITY, 3416 Empire State Bldg. · CHICAGO, 2051 One La Salle St. Bldg. · SALT LAKE CITY, 101 West Second South St. · LOS ANGELES, 919 Chester Williams Bldg. · SPOKANE, S. 2707 Rhyolite Rd.

B. C. EQUIPMENT CO., LTD.
551 Howe St., Vancouver, B. C.

Export Department—104 Pearl St., New York City. Foreign Sales Agencies: London, Lima, Rio de Janeiro, Buenos Aires, Santiago, Antofagasta, Oruro, Montevideo, La Paz

MEET THE *NEW*

MARION

A BIGGER AND BETTER

THE MARION STEAM SHOVEL

151M

ROCK SHOVEL!

Here it is...

WITH EVERY FEATURE NECESSARY
FOR
HEAVY DUTY SERVICE

OUTSIDE DIPPER HANDLE
TWO-PIECE DIPPER
SINGLE HITCH TO DIPPER
AMPLIDYNE - ROTOTROL CONTROL

POWER - SPEED - WEIGHT
COMBINED TO MAKE THIS THE
MACHINE OF TOMORROW

WHAT IS YOUR PROBLEM?

3/4 CU. YD. TO 40 CU. YDS.

OMPANY • MARION, OHIO

How to Move MORE CUBIC YARDS

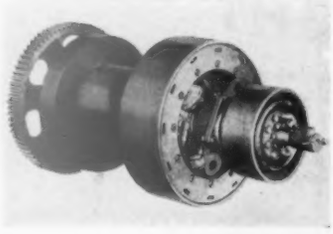
. . . at lower cost

Experience has proved that shovels, cranes, dredges and draglines equipped with Fawick Airflex Clutches give you new ***full-time*** operating efficiency.

1. These clutches absorb torque, shock and vibration, and transmit power through a cushion of air.
2. They have no arms, springs or levers to break, wear out or get out of adjustment.
3. They require no lubrication—maintenance costs are unusually low.
4. Their flexible cushioning action protects *both* motor and mechanism.

The RESULT—more hours of effective service—fewer breakdowns—more material moved—at lower cost per cubic yard.

Fawick Clutches are providing new efficiency for shovels, cranes, draglines and hoists.



◀ Seven Fawick Clutches are used on the Byers ½ cu. yd. "Traveler."

◀ Hoist drum assembly of the shovel above — Fawick equipped.

Marion dragline, equipped with Fawick Swing Clutches.

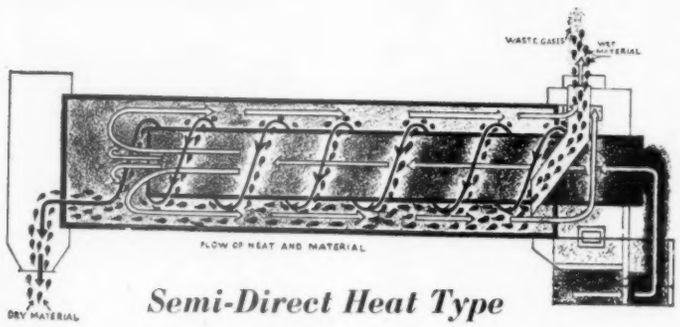
Write us for complete data, and recommendations engineered to suit your equipment. Book on request.

FAWICK *Airflex* CLUTCH

FAWICK AIRFLEX CO., INC. • 9919 Clinton Road, Cleveland 11, Ohio

CHRISTIE

Rotary Dryers
Rotary Retorts
Coolers



Semi-Direct Heat Type
for Economy

If
you have
A Drying or Calcining
Problem
in which

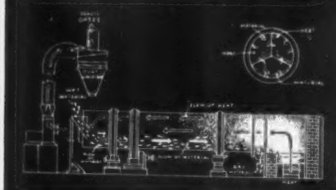
A Rotary Dryer
can be used

profit by our half century of specialized experience. Undoubtedly you can lower production cost considerably by elimination of heat loss from over-heating of material—avoiding costly shut downs, etc., by using superior designed and constructed equipment.

Write us regarding your problem and we will gladly work with you to a satisfactory conclusion.

Dustless Indirect Heat Principle

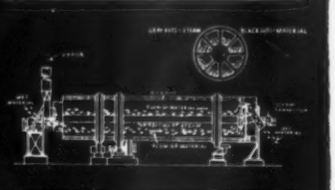
Direct Heat Parallel Flow Principle



Direct Counter Flow Principle

Steam Tube Principle

Enclosed Direct Heat Principle

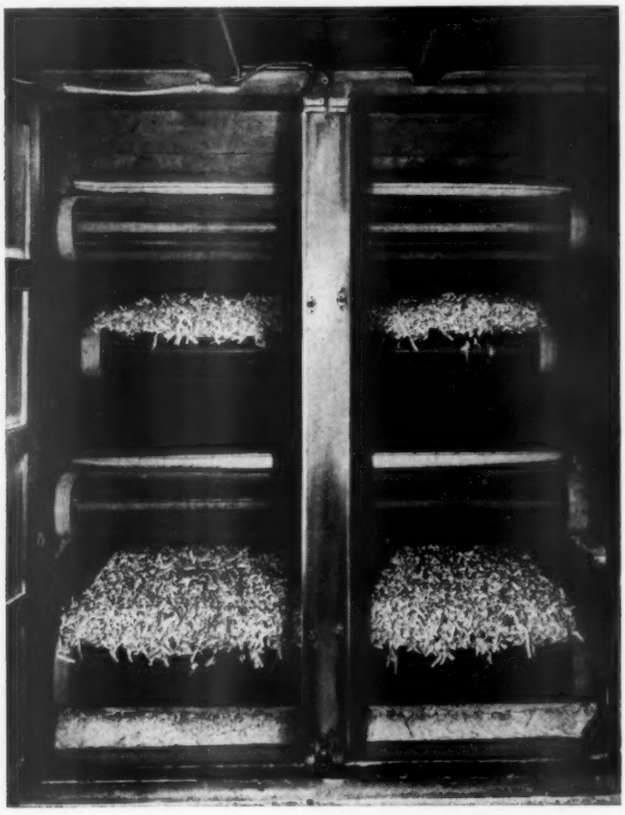


Steam Jacketed Principle

The L.R. CHRISTIE CO.

17 E. 42nd Street
New York 17, N.Y.

One of a number of Claremont dryers used by the Atlantic Macaroni Co. of Long Island City, N. Y.



Interior end view of the Claremont automatic, continuous noodle dryer showing arrangement of conveyors.

DEHYDRATING . . . one of a hundred tasks of Wickwire Spencer Wire Cloth

Containing six staggered tiers of 40 ft. long, 6 ft. wide conveyors, this noodle dryer uses wire cloth belts or aprons. The size of the aprons, the loads they carry, and the atmospheric conditions under which they operate, are important in determining the type of wire cloth used. For this purpose Wickwire Spencer supplies the Claremont Machine Co., Brooklyn, N. Y., with tinned or galvanized wire cloth in which the warp wires are of spring steel, with annealed filler wires.

This is but one example of the countless purposes for which Wickwire Spencer Wire Cloth is used by the hundred industries we serve . . . a service which had its beginning 87 years ago when we pioneered in the use of power looms for weaving wire cloth.

Today Wickwire Spencer makes wire cloth of all commonly used metals . . . in a dozen different weaves . . . coarse and fine mesh . . . for screening, filtering, separating, grading, cleaning and processing.

Whatever your wire cloth needs, Wickwire Spencer can meet your exact specifications. Our engineers are available to help in solving your wire cloth problems. Just write Mechanical Specialties Division, Wickwire Spencer Steel Co., Sterling Street, Clinton, Mass.

Free Books on Wire Cloth ...Perforated Metals

These profusely illustrated reference guides are filled with valuable technical information regarding proper selection and usage of wire cloth and perforated metals. For your copy of either one or both books, address Mechanical Specialties Division, Wickwire Spencer Steel Company, Sterling Street, Clinton, Mass.

WICKWIRE SPENCER STEEL COMPANY

EXECUTIVE OFFICES—500 FIFTH AVENUE, NEW YORK 18, N. Y.

Abilene (Tex.) • Boston • Buffalo • Chattanooga • Chicago • Clinton (Mass.) • Detroit • Houston • Los Angeles • Philadelphia • San Francisco • Tulsa • Worcester

FREE!

This beautiful, full-color poster, painted by the well-known illustrator, N. C. Wyeth, is yours for the asking. Printed on heavy paper, size 27½" x 43½", this attention-compelling poster is ideally suited for posting in industrial plants and offices.

RETURN COUPON FOR YOUR COPIES NOW!

HERCULES

CHEMICAL MATERIALS FOR INDUSTRY

HERCULES POWDER COMPANY INCORPORATED *960 King St., Wilmington 99, Del.*

Please send me..... copies of your poster THE SPIRIT OF '46. I understand that this places me under no obligation whatsoever.

*Name*_____

*Title*_____

*Company*_____

*Street*_____

*City*_____

*Zone No.*_____ *State*_____

IN-223

"Just look at the locations of those six Bemis Multiwall plants!"

"Yes, that's another reason IT PAYS TO BE A BEMIS MULTIWALL PAPER SHIPPING SACK CUSTOMER!"

The strategic locations of the six Bemis Multiwall plants mean quick service to all sections of the country. • And that's not all . . . working as a team, these plants support each other in filling the needs of Bemis customers. In emergencies, the plant with which an order is placed can depend on five other Bemis plants for assistance in meeting scheduled shipping dates. Such advantages are why folks say: • "It pays to be a Bemis Multiwall Paper Shipping Sack Customer."

Bemis Multiwall Paper Shipping Sacks

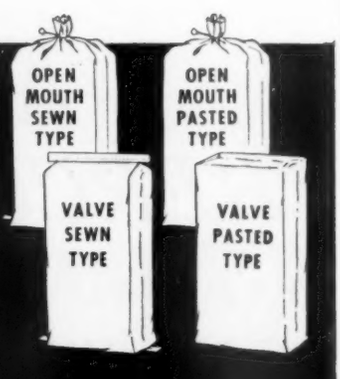
6 PLANTS

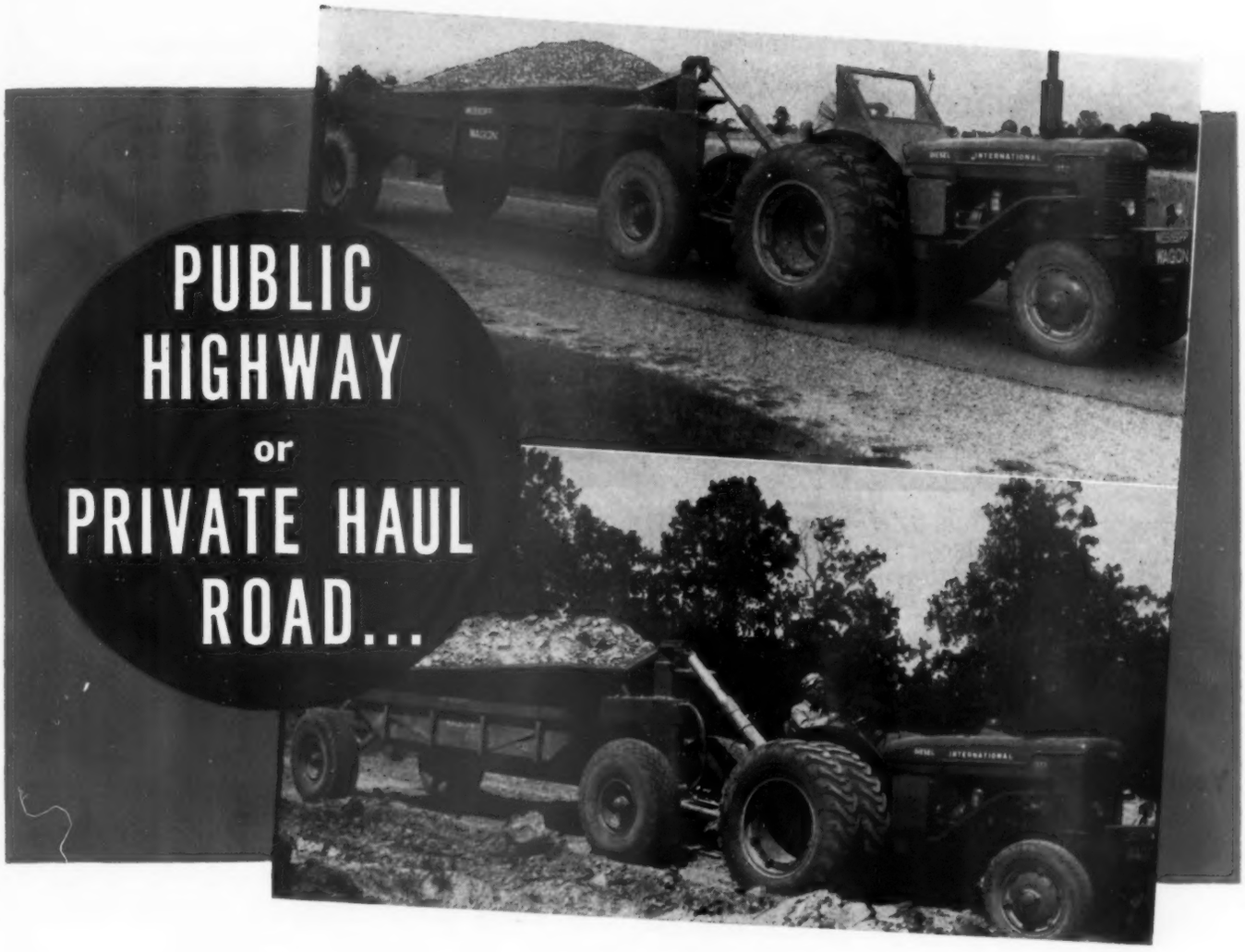
Peoria, Ill. · East Pepperell, Mass. · Mobile, Ala. · San Francisco, Calif. · Wilmington, Calif. · St. Helens, Ore.

BEMIS BRO. BAG CO.

OFFICES: Baltimore · Boston · Brooklyn · Buffalo · Charlotte · Chicago · Denver · Detroit · East Pepperell · Houston · Indianapolis · Kansas City · Los Angeles · Louisville · Memphis · Minneapolis · Mobile · New Orleans · New York City · Norfolk · Oklahoma City · Omaha · Orlando · Peoria · St. Helens, Ore. · St. Louis · Salina · Salt Lake City · San Francisco · Seattle · Wichita · Wilmington, Calif.

BEMIS BRO. BAG COMPANY





Here's the versatile hauling unit that takes them both in stride!

• Long or short hauls . . . on or off the highway . . . it's all the same to Mississippi Wagons. Put them on your tough construction jobs, or use them for fast over-the-highway hauls . . . either way you'll get the big output and low yard-mile costs that have made Mississippi Wagons famous around the world.

Four-axle construction, made possible by the weight-transfer feature found exclusively on Mississippi Wagons, is the reason for their ability to handle such a wide variety of hauling assignments.

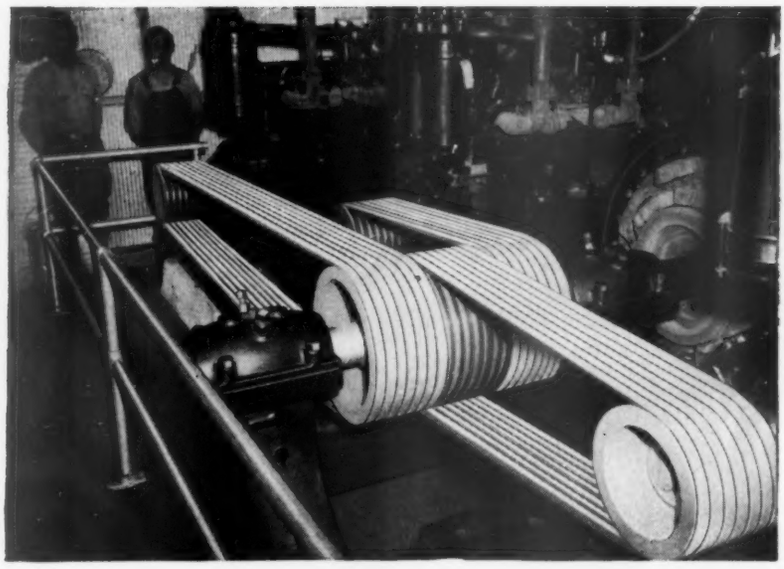
Four axles provide maximum flotation of the Mississippi Wagon and its load over spongy ground, permit travel over blacktop and other pavements without damage to road surfaces, and make it possible to haul 27,000-pound payloads on highways without exceeding state axle-loading limits.

All-round performance like this makes it unnecessary for the contractor to have a double investment in hauling equipment. A single investment in Mississippi Wagons puts you in a position to handle both construction and long-haul jobs—and to handle them at costs that will assure you of "all the profit there is in the job."

Write us, or consult your nearest distributor, for further information on Mississippi Wagons and recommendations as to which type or types will serve you most profitably.

M-R-S MANUFACTURING COMPANY ● Jackson, Mississippi

MISSISSIPPI WAGON *The World's Most Modern Hauling Unit*



All Gates V-Belts are Built With

The Patented CONCAVE SIDE

There's a very definite reason for this fact

Your **GATES VULCO ROPES**

Are Today Making Performance Records *NEVER EQUALED* by *ANY* V-Belts Before!

Early in the war, it became perfectly clear that Army tanks, tractors and self-propelled big guns in *combat service* simply *had* to have V-Belts of greater strength and durability than had ever been built before. Gates developed these greatly superior V-belts through intensified, specialized research — and here is why this fact is now important to YOU:——

Here is the reason

Every improvement developed by Gates for these Army V-belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

Here is one of the very few instances in which improvements developed primarily for military use could be passed on *immediately* to you. Ordinarily, *you* would have had to wait. An exception was made in the case of Gates V-belts because it was recognized that industry needed the best possible V-belts in order to achieve the greatest possible production—and maximum production was vitally essential.

That is why Gates has been able to pass on to you, day by day, every V-belt improvement developed for our armed forces during the war — and that is why your *Standard* Gates Vulco Ropes are today outperforming *any* V-belts ever built before!

Gates — THE MARK OF SPECIALIZED RESEARCH

THE GATES RUBBER CO.

Engineering Offices and Jobber Stocks in All Large Industrial Centers

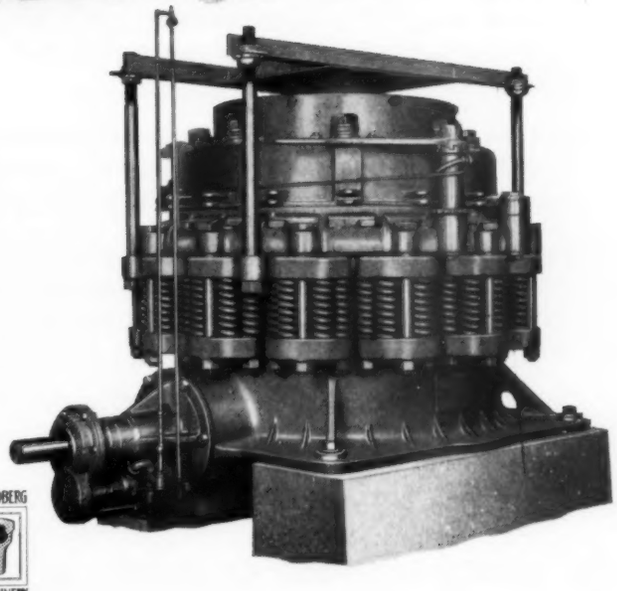
4512

GATES VULCO ROPE DRIVES

CHICAGO 6, ILL., 549 West Washington. NEW YORK CITY 3, 215-219 Fourth Avenue. ATLANTA 3, GA., 521 C. & S. Nat'l Bank Bldg.
LOS ANGELES 21, CAL., 2240 E. Washington Blvd. DENVER 17, COLO., 999 S. Broadway. DETROIT 2, MICH. 223 Boulevard Bldg.
PORTLAND 9, ORE., 333 N.W. 5th Ave. DALLAS 2, TEXAS, 1710 N. Market St. SAN FRANCISCO 3, CAL., 170 Ninth St.

ALL NATIONS AGREE

that the Symons Cone is without equal for fine crushing operations. This is evidenced by its use in practically every industry in every country throughout the world where ores, rock, gravel, slag and similar materials are produced in quantity. Users amongst all nations agree that the Cone delivers a finer product in greater capacity at lower cost than was ever possible with any type of reduction crushing equipment.



NORDBERG MFG. CO.
MILWAUKEE 7, WISCONSIN
NEW YORK · LOS ANGELES · LONDON · TORONTO · JOHANNESBURG

NORDBERG MACHINERY

SYMONS CONE CRUSHERS

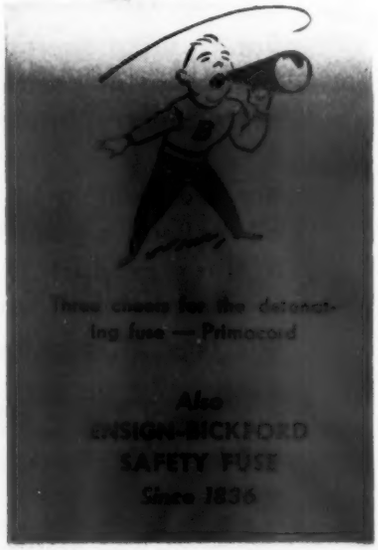
"Primacord helps us get more work from our Explosives"

Primacord gets more from explosives because it acts as the detonator for every cartridge in the hole. Every cartridge in each charge *goes* with the force of a primer cartridge.

Primacord gets more from explosives because the detonating wave of Primacord, although practically instantaneous, allows a fractional time delay between holes and rows of holes sufficient to relieve burden.

Primacord gets more from explosives because it allows charges to be readily varied to meet conditions . . . to conform with rock strata . . . to be split into decks so that the charge is given the right power where it is needed most.

With every shot, no matter how small or large, the use of Primacord can assure more complete fragmentation . . . provide faster digging . . . easier handling.

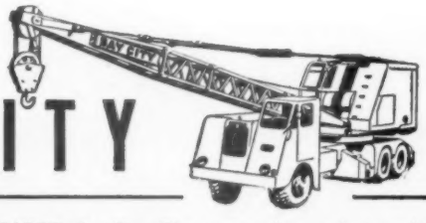


THE ENSIGN-BICKFORD COMPANY • Simsbury, Connecticut

P-12

PRIMACORD-BICKFORD Detonating Fuse •

Talk about power and speed!—the BAY CITY Model 25 half-yard shovel, 5 ton crane, has plenty of both. One-piece chain crowd operates independent of hoist, hence utilizes full engine power. Bucket can be thrust beyond and above boom tip when necessary. Retract speed is twice crowd speed—capacity load is swiftly swung clear and dumped. BAY CITY Model 25 is the ideal sturdy, fast shovel for scores of jobs like road grading where it does a clean, quick job as illustrated above. Husky? Ruggedly built with unit-cast alloy steel lower carbody and revolving table. Tandem drums on separate shafts. Heavy duty differential drive. Fully convertible from shovel to crane, drag, hoe, or skimmer. For consistently greater yardage, put the BAY CITY Model 25 to work for you. Other BAY CITY cranes and shovels available in a wide range of sizes and models—both crawler and pneumatic tire mounted. Call your nearest BAY CITY dealer today or write directly to BAY CITY SHOVELS, INC., Bay City, Michigan.



BAY CITY

SHOVELS • DRAGLINES
CRANES • HOES • CLAMSHELLS

SEE YOUR NEAREST DEALER for Bay City excavating and material handling equipment in sizes from ⅜ to 1¼ yards having crane rating up to 20 tons. Both crawler and pneumatic tire mounting.

HOW A B-G BUCKET LOADER REDUCES RECLAIMING COSTS

Besides providing the most economical means known of getting ground-stored material from stockpiles into trucks, the Barber-Greene Bucket Loader has many additional advantages in reclaiming work.

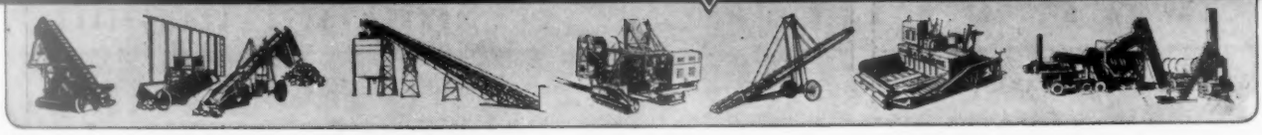
It permits simpler planning and coordination. Fast loading reduces truck time — an important expense factor. It requires no special operator — trucks can be loaded by your drivers. It is easily transported — and, on short trips, moved under its own power. Pneumatic-tired model shown in photo can be towed at highway speeds.

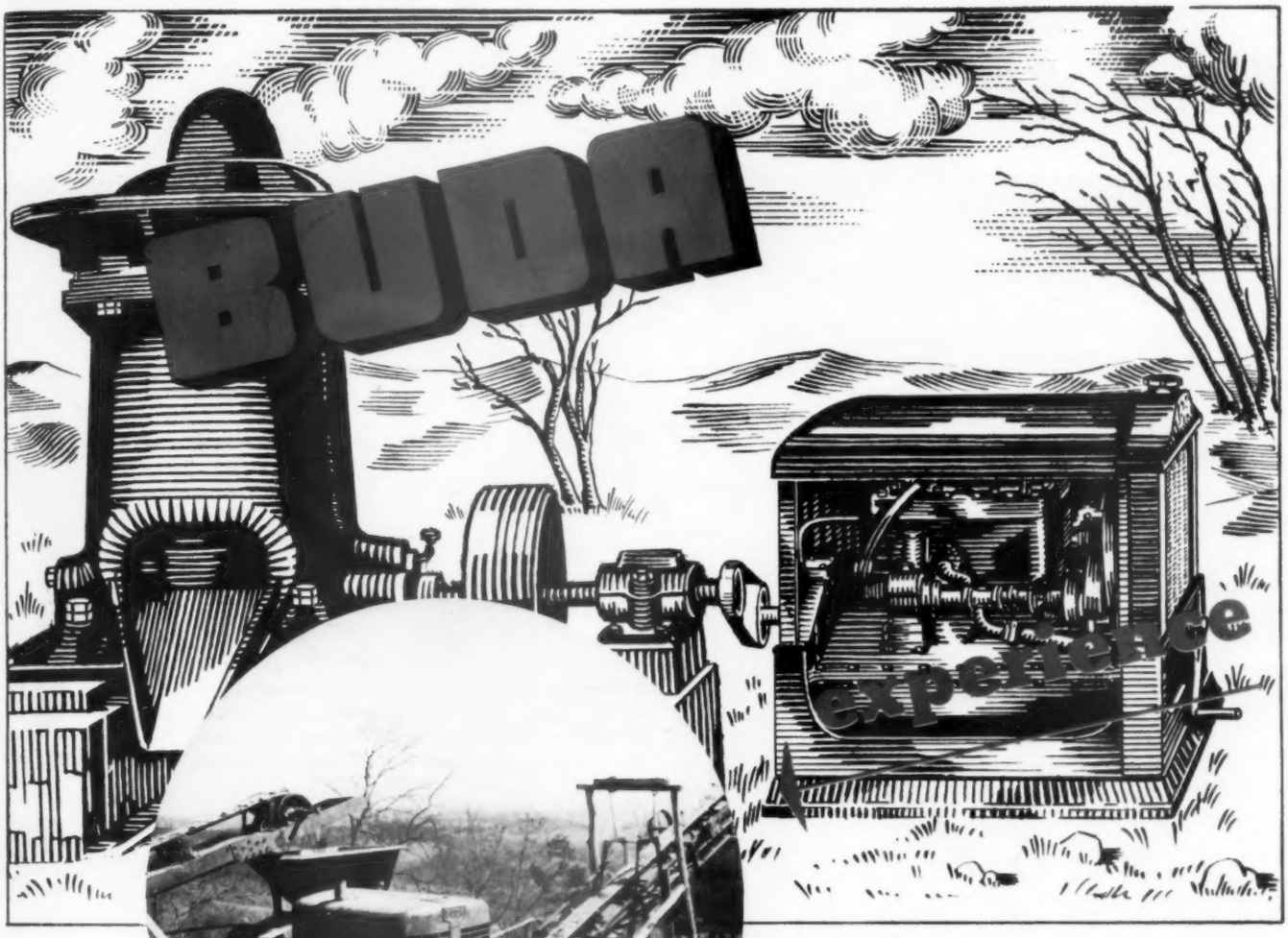
Continuous handling by a B-G Bucket Loader yields bigger yardages with less cost than any other method you can choose. It provides loading equipment with less weight . . . requires less power. Then, too, the output of processing equipment — screens, crushers, conveyors — is boosted when there's a B-G Bucket Loader on the feeding end.

The B-G Bucket Loader line includes several pneumatic and crawler mounted models, with a wide range of accessories. Write for free literature. Barber-Greene Company, Aurora, Illinois.

45-25

Barber-Greene B G *Constant Flow Equipment*



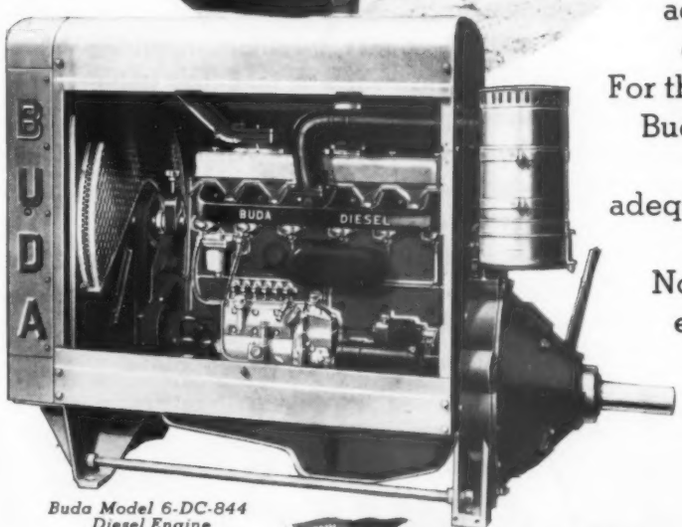


Modern Buda 6-DC-844 Diesel powering a pulveriser

. . . Pacing the Progress of Power

In the years since 1881 Buda has accumulated the engineering knowledge that today spells EXPERIENCE. For the last 35 of these 64 eventful years, Buda has manufactured engines...each progressive engine model more adequate for the job at hand and increasingly powerful as the need arose. Now you can have the most powerful, efficient and economical engine yet designed—*built by Buda*, present day symbol of progress in power.

Write or wire today for facts



Buda Model 6-DC-844 Diesel Engine

Buda Universal Diesel Injector and Nozzle Tester

ARMY NAVY

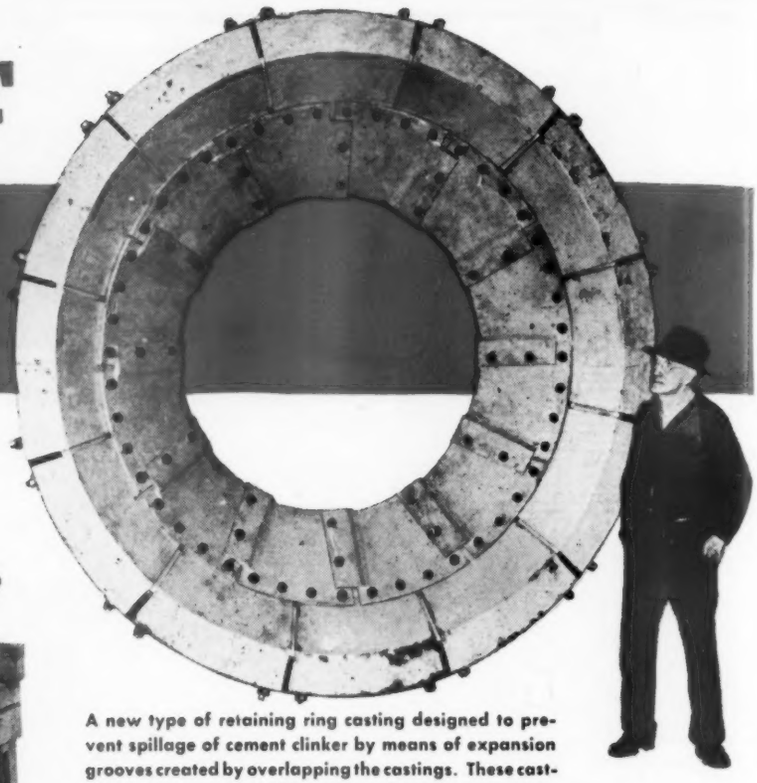
BUDA

15426 Commercial Ave.
HARVEY (Chicago Suburb) **ILLINOIS**

Buda Model 2215-SB "all purpose" Jack

Cast to LAST

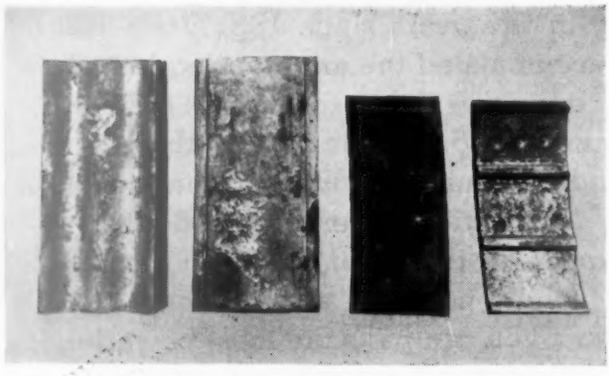
on cement mill equipment



A new type of retaining ring casting designed to prevent spillage of cement clinker by means of expansion grooves created by overlapping the castings. These castings are operated without any refractory protection.

B&W ALLOY CASTINGS

Cast rotary kiln feed pipes, 7½" O.D. x 9' 8½" long, for a cement plant in Pennsylvania.



B&W Tube Mill Liner Castings.

ON A KILN where previous nose ring castings lasted but eight months, B&W Alloy Castings have stood up for three long years—and are good for several more!

Castings that give such lasting service under severe, high-temperature conditions, are a big help in reducing time-consuming repairs and replacement shut-downs.

B&W Alloy Castings—in practically any shape or weight—can be supplied in analyses to meet almost any set of requirements encountered in rock products equipment. They withstand service temperatures up to 2000 F., under conditions requiring high creep strength, consistent with long-time stability. They are produced in the modern B&W foundry, which is equipped with electric induction furnaces, heat-treating facilities, electric welding apparatus, and X-ray inspection equipment.

For castings that *last*, get in touch with B&W. The experience gained in helping others solve their equipment problems with B&W Alloy Castings is always available to you without obligation.

Water-Tube Boilers, for Stationary Power Plants, for Marine Service . . . Water-Cooled Furnaces . . . Superheaters . . . Economizers . . . Air Heaters . . . Pulverized-Coal Equipment . . . Chain-Grate Stokers . . . Oil, Gas and Multifuel Burners . . . Seamless and Welded Tubes and Pipe . . . Refractories . . . Process Equipment.

BABCOCK & WILCOX

THE BABCOCK & WILCOX CO.
85 LIBERTY STREET, NEW YORK 6, N.Y.

C-66

HERE'S WHAT YOU GET WITH A FULLER ROTARY

DIRECT DRIVE

ACCESSIBILITY

LOW MAINTENANCE

SIMPLE FOUNDATIONS

BLADES AUTOMATICALLY COMPENSATE FOR WEAR

SMALL FLOOR SPACE WITH RELATION TO CAPACITY

MAINTAINED CAPACITY FOR THE LIFE OF THE MACHINE

UNNECESSARY BULK ELIMINATED

NO BEARING TAKE-UP

NO LEAKING VALVES OR GRINDING OF SEATS

NO AIR-LINE PULSATIONS

NO MULTIPLICITY OF PARTS REQUIRING FREQUENT ATTENTION, ADJUSTMENT AND REPLACEMENT

Simple Design... Rugged Construction... Efficient Performance

Fuller Compressors are built for capacities to 3300 c.f.m., 125-lb. pressure. Vacuum pumps for vacuums to 29.90-in. (referred to 30-in. barometer).

For many years Fuller engineers have striven to build the best compressor money could buy . . . simple in design, easy to operate, ruggedly constructed for long, continuous service at minimum expense. With these thoughts uppermost in mind, it's natural that only the best of materials and workmanship go into the makeup of Fuller Rotaries. Also designed so that when repairs and inspection do become necessary, the work can be accomplished with the least possible effort and minimum loss of time.

This continued effort has paid dividends, as is shown by the hundreds of machines in daily operation and the many repeat orders from satisfied users.

Before purchasing your next compressor it will pay you to consider the outstanding features of these really efficient machines. Let us send you Bulletin C-5. It's yours for the asking.

FULLER COMPANY, CATASAUQUA, PA.

Chicago 3 - 1144 Marquette Bldg.
San Francisco 4 - 421 Chancery Bldg.
Washington 5, D. C. - 618 Colorado Bldg.

C-135

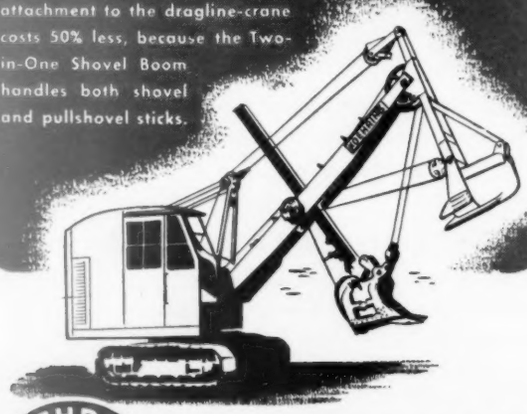
FULLER

PIONEERS OF HIGH-EFFICIENCY ROTARY COMPRESSORS

On the "Bread-and-Butter" county drainage jobs that are the backbone of many a contractor's business, the Koehring 205, as a dragline, is an outstanding low-cost producer.

LOW COST CONVERTIBILITY

Adding the 205 shovel-pullshovel attachment to the dragline-crane costs 50% less, because the Two-in-One Shovel Boom handles both shovel and pullshovel sticks.



CABLE ECONOMY: Cable leads, both drag and hoist, go over tops of drums; cable hugs drum grooving. Fairlead rotates.

PRECISION BRAKES, CLUTCHES: Inside band clutches are s-m-o-o-t-h. Brakes release completely.

SELF-CLEANING SHOES: Important when you're working in mud or on soft ground.

SAFE TRACTION BRAKES: Work securely on banks and inclines. Traction brakes, on both crawlers, can be engaged instantly, from the cab.

ANTI-FRICTION BEARINGS: Long casts, with drums spinning on anti-friction bearings, extend the reach of the Koehring 205.

Koehring Means Heavy-Duty — and like the larger Koehring 304 and 605, the 205 dragline-crane-shovel is built to high performance standards.

KOEHRING HEAVY DUTY

KOEHRING COMPANY
MILWAUKEE 10, WISCONSIN

HEAVY-DUTY CONSTRUCTION EQUIPMENT

Less Bark . . . MORE BITE
with
ATLAS ROCKMASTER
and the
Rockmaster Blasting System

The proven results of this newest Atlas First:

- NOISE AND CONCUSSION . . . the "bark" that caused so many complaints is drastically cut down.
- ROCK BREAKAGE . . . the "bite" that really counts most to superintendents . . . is decidedly more complete.
- SECONDARY BLASTING is reduced to a minimum.
- BACK BREAK . . . drillers get more solid footage due to far less back break.

It's good business on your part to investigate this important new blasting development at once.

A COMPLETE SYSTEM

Atlas Rockmaster and the Rockmaster Blasting System is a whole new method — a combination that means real money to you. The electric blasting cap is new — explosives have been geared to the job — and the selection, handling and loading processes have been redesigned.

Only the Atlas Representative can tell you about this exclusive Atlas development. Get in touch with him today — test the new Atlas Rockmaster System in your toughest shooting.

Results will amaze you.

You'll know Rockmaster
It's Blue

ATLAS ROCKMASTER
with the
GREATER SAFETY of ATLAS MANASITE DETONATORS

ATLAS EXPLOSIVES
"Everything for Blasting"

CHEMICALS ATLAS EXPLOSIVES

ATLAS POWDER COMPANY, Wilmington 99, Del. • Offices in principal cities • Cable Address—Atpowco

The Dempster-Dumpster Is A "MUST" In Any Quarry—

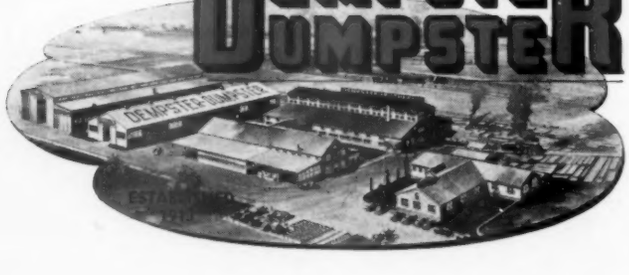
★ ★ ★ ★ For Rock Bottom Production Costs

If the materials you handle within your plant are rock, gravel. sand or any other, you'll do it faster and at tremendous savings with the Dempster-Dumpster system!

If you are doing the job now with even three, four or five trucks, the chances are that you can do it better with only one truck the Dempster-Dumpster way. Yes, with only one of your present trucks equipped with a Dempster-Dumpster Hoisting Unit, and with six, twelve, twenty-five, or any number of Dempster-Dumpster bodies your particular operation may require, you can do the job better while you save on trucks, tires, gas and precious manpower.

If you have never seen the Dempster-Dumpster work, then you can't comprehend its efficiency or how simple and easily it can be adapted to your use.

Let us tell you where you can see this remarkable materials handling equipment in actual operation.



DEMPSTER BROTHERS, Inc., 1125 Springdale, Knoxville 17, Tenn.

Better Trucks for YOUR Business!

"Ford Trucks Often The Profit Factor"

Because hauling is one of the great cost items in the contracting business, contractors favor Ford Trucks. They know they can depend on Fords to do the tough jobs better . . . and for less money. Mr. Dave L. Brown, general contractor, Chattanooga, Tennessee, says:

"I have used Ford products for 20 years. I now own a fleet of 38 Ford Trucks with average mileage of 100,000 miles apiece. The flexibility of these units, the availability of replacement parts, the service rendered by Ford dealers, the low original cost and the low cost of operation have many times represented the difference between profit or loss on a contract."

See the new Ford Trucks at your Ford Dealer's. Consider their many famous superior qualities—their brand-new engineering advancements designed to save you oil and gas, and add to the life of your trucks. We believe you'll agree with Mr. Brown . . . and will make Ford Trucks your choice in your own business.

Ford

ADVANCED ENGINEERING IN NEW FORD TRUCKS

More Economy and Endurance
Easier Servicing

A STILL GREATER 100 HP V-8 ENGINE with NEW Ford steel-cored Silvaloy rod bearings, more enduring than ever in severe service • NEW aluminum alloy cam-ground 4-ring pistons for oil economy • BIGGER, more efficient oil pump and IMPROVED rear bearing oil seal • NEW longer-lived valve springs • NEW improvements in cooling • NEW efficiency in ignition • in carburetion • in lubrication • in ease and economy of servicing operations • And available in all truck chassis except C.O.E. units—the rugged, thrifty 90 HP FORD SIX-CYLINDER ENGINE, with many important advancements.

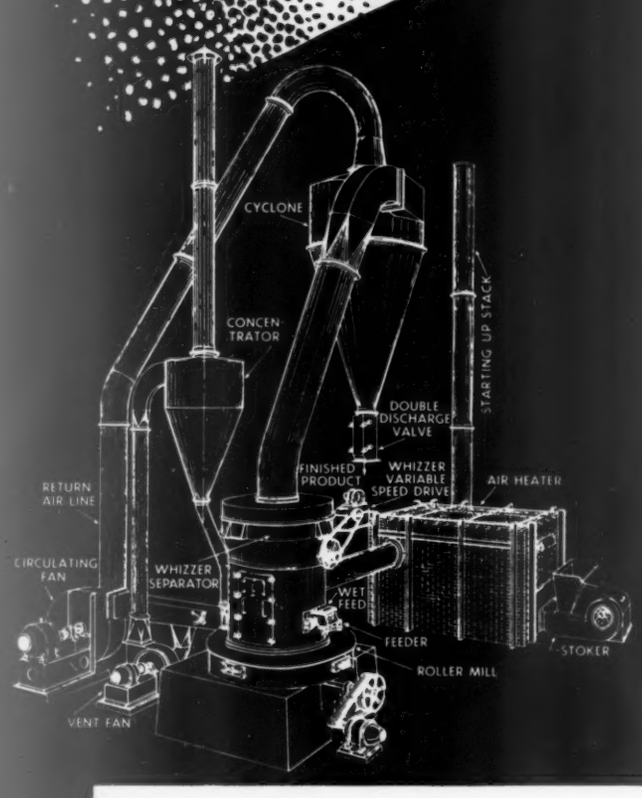
FORD CHASSIS ADVANTAGES: Easy accessibility for low-cost maintenance • Universal service facilities • Tough, forged front axles • Extra-sturdy rear axles with pinion straddle-mounted on 3 large roller bearings, ¾-floating type in light duty units, full-floating in all others • 3 axle ratios available (2 in 1-ton unit) • 2-speed axle available in heavy duty units at extra cost • Powerful hydraulic brakes, large drums, cast braking surfaces • Rugged 4-speed transmission with NEW internal reverse lock optional at extra cost on light duty units, standard on all others.

FORD TRUCKS

MORE FORD TRUCKS ON THE ROAD • ON MORE JOBS • FOR MORE GOOD REASONS

DRY IT as you GRIND IT

that's ONE OPERATION for the Raymond Roller Mill



THE production of *fine, dry, free-flowing materials* is a job best handled by the flash-drying-equipped Raymond Roller Mill.

Take the case of limestone grinding: The High Side Roller Mill with double whizzer separator produces two grades, a primary product at 85% passing 200-mesh for feed purposes, and a secondary product at 99.5% minus 20-mesh fineness for agricultural use. At the same time, the surface moisture of from 5% to 7% is reduced to a final content of less than one per cent.

Another example is gypsum grinding: For this, a Low Side Roller Mill is equipped with flash drying to remove the surface moisture only and at the same time the gypsum is pulverized to a uniform fineness, delivering a fine, dry, free-flowing material to the kettles.

If you are handling any type of non-metallic-minerals, carrying small amounts of moisture, you can dry and grind in-the-mill, and obtain a higher capacity with a Raymond Roller Mill.

Write for Catalog No. 51

SINCE 1887

RAYMOND PULVERIZER DIVISION
COMBUSTION ENGINEERING COMPANY, INC.
1321 NORTH BRANCH ST. CHICAGO 22, ILLINOIS

Sales Offices in Principal Cities

Canada: Combustion Engineering Corp., Ltd., Montreal

How fast-acting LIMITAMP CONTROL

protects high-voltage motors

TYPE EJ-2 FUSES CLEAR FAULT CURRENTS IN ½ CYCLE

● Limitamp control, with its current-limiting EJ-2 fuses, provides *fast, positive* short-circuit protection for high-voltage squirrel-cage, synchronous, and wound-rotor motors.

When a short circuit occurs, the fuses cut off the rise in current in less than a quarter cycle, and clear the short in less than a half cycle—long before the short-circuit current has time to harm the contactors or motor.

Gives This Lumber Mill Sure, Short-circuit Protection

New Limitamp controls at the Hammond plant are inspected by Lloyd Snook, chief electrician. This factory-assembled group control saves installation time and space as well as materials.

For the newest "packaged" control to protect high-voltage motors, the Hammond Lumber Company of Eureka, Cal., chose fast-acting *Limitamp control.*

Incoming power for the mill is taken directly from the generator bus of a nearby generating station. Therefore, power under short-circuit conditions may run as high as 150,000 kva, making a high degree of protection essential.

Limitamp control, with its current-limiting fuses, provides this protection for all motors in the plant.

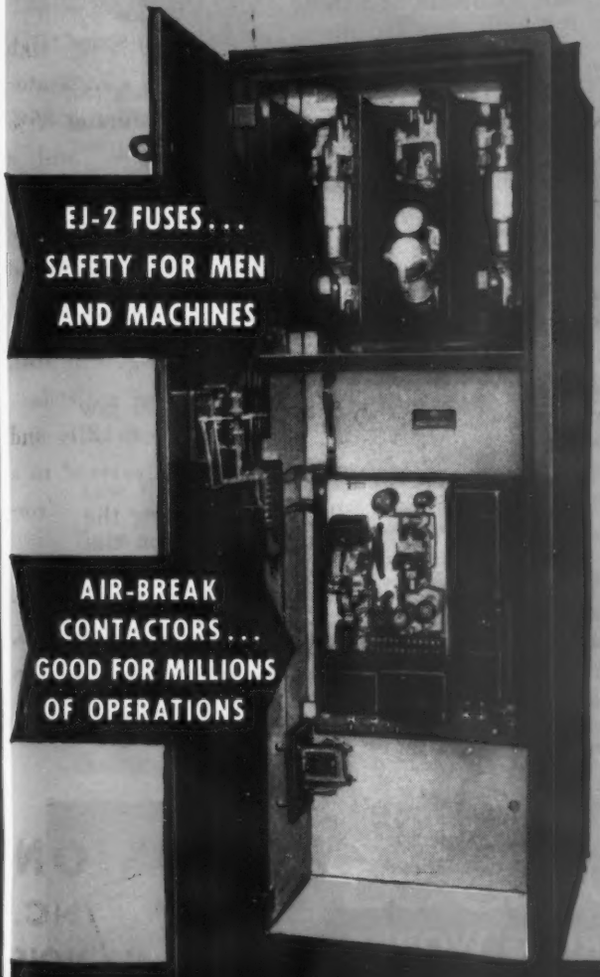
INDUSTRIAL CONTROL

Keep on buying BONDS—and *keep all you buy*

Other Advantages Limitamp Control Offers YOU

1. ***New air-break contactors*** **meet the most severe requirements of high-voltage motor-control service.**
2. ***Efficient overload relays,*** **accurately calibrated against actual motor characteristics, protect your motors from overheating.**
3. ***Undervoltage protection*** **— when power fails or voltage is low, the motor is taken off the line and will not restart on return of power.**
4. ***Silent operation*** **—EJ-2 fuses are noiseless when they blow.**

NEED MORE INFORMATION? Bulletin GEA-4247 gives a complete, illustrated description of Limitamp control. For a copy, contact our local office. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

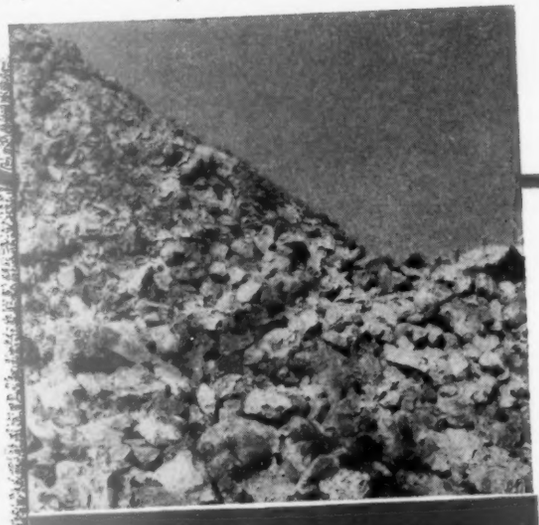


GENERAL ELECTRIC

CRUSHING FLINTROCK

ONE OF THE HARDEST AND MOST ABRASIVE ROCKS IN THE WORLD

with PIONEER EQUIPMENT



Flintrock boulders, near Joplin, Mo. equalled in abrasiveness by only one known South African rock deposit

Pioneer Plant owned by Harold Youngman of Baxter Springs, Kansas.

Pioneer No. 56 Primary Crusher Unit—Traveling Grizzly Feeder and 2436 Primary Jaw Crusher.

● This is one of those interesting jobs that men who make their living in pit and quarry enjoy reading. It begins with the Santa Fe railroad which has recently installed new high-speed trains on its main line west of Kansas City. It was found that limestone ballast did not stand up under severe service.

Chats, which are rejects from lead and zinc mines near Joplin, Mo., were available, but their size was minus $\frac{3}{8}$" and too fine for ballasting the main line for high-speed trains.

Also available were great piles of flintrock which the mine operators had rejected as uncrushable. The mining section of W.P.B. advised that this rock was the most abrasive known in the U. S. and equalled only by one known rock deposit in the world located in South Africa.

Harold Youngman of Baxter Springs, Kansas, took the contract to crush this flintrock to $1\frac{1}{2}$" minus. The following PIONEER equipment is doing the job:

- a PIONEER No. 56 Primary Crusher, which consists of a Grizzly feeder and a 2436 Primary Jaw Crusher
- a PIONEER 1536 intermediate jaw crusher
- a PIONEER 48-V plant which includes a 1036 jaw crusher, a 40" x 22" roll crusher and a 4' x 12' vibrator screen.

Because of the extreme abrasiveness of the rock, it was found that better results could be obtained by using the four crushers and closing down the top opening on the jaw crushers, thus reducing the angle between the jaws and increasing the manganese life several times.

PUT IT UP TO PIONEER

You may never have a job like Mr. Youngman's, but whatever your job you'll want Pioneer equipment—the dependable equipment built with extra margins of performance for extra profits.

Pioneer
ENGINEERING WORKS
Jaw Crushers • Roll Crushers • Screens • Conveyors • Feeders • Washers

ENGINEERS and MANUFACTURERS of QUARRY-GRAVEL AND MINING MACHINERY

MINNEAPOLIS 13, MINN

How We Keep A Fast Crowd In Line

Here's a *fast crowd* that doesn't give trouble--not the way P&H builds it!

It's plain to see why the crowding action of P&H Electric Shovels is so much livelier — more responsive and powerful. Conical worm gear drive cuts inertia to a minimum — permits the most compact gearing unit possible. Only very short shafting is required; overhung gearing is eliminated. Every ounce of power from the independent crowd motor flows smoothly to the dipper sticks for *snappier* crowding — *faster* retracting.

P&H engineers increase the advantages of the compact, flood-lubricated gear case design by building it integral with the boom. Welded-in construction adds to boom rigidity and strength, while integral shipper shaft housing prevents bearing movement and torque on the boom. The net result in any open-pit operation is bigger and steadier production.

This faster, more dependable crowd is another example of the advanced engineering and simplified design that mark the new P&H Electric Shovels as the greatest forward step in electric shovel history. Behind them is P&H's 60-year leadership in applying electrical power to the movement of heavy loads.

P&H

ELECTRIC SHOVELS

4451 W. National Avenue
Milwaukee 14, Wisconsin

HARNISCHFEGER CORPORATION

EXCAVATORS • ELECTRIC CRANES • ARC WELDERS P&H HOISTS • WELDING ELECTRODES • MOTORS

THE GREATEST FORWARD STEP EVER MADE IN ELECTRIC SHOVEL DEVELOPMENT

KENNEDY-VAN SAUN
FINE EQUIPMENT for Producers of Sand, Gravel, Crushed Stone, Lime and Cement

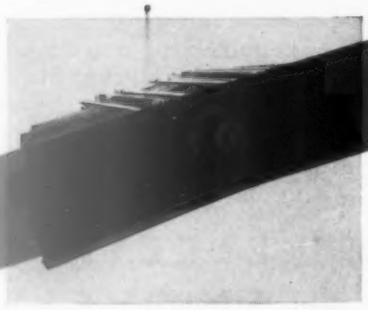
"Good Roads

The KVS Engineering Service—versatile, experienced, and proved in practice—is the road to profits for non-metallic minerals producers.

KVS equipment is today's standard for large-scale post-war production. The KVS line of machinery meets every requirement.

Avoid unnecessary "detours" by consulting KVS experts, and specifying KVS units for either standard or special use — and you're on the right road to new high performance and profit records.

KVS Swing Jaw Crusher for handling large tonnages of any kind of rock. Extra heavy duty type. Available in sizes to suit all output or feed requirements. Split frame construction. Fly wheels heavy and unbalanced to give kinetic energy and help lift pitman on upward stroke.



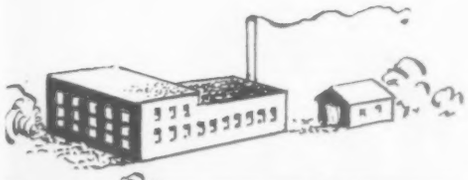
KVS Vibrating Screen, featuring low installation and maintenance costs. Gives positive action on screen cloth without transmitting vibration to supporting members. Two types available, in several sizes.

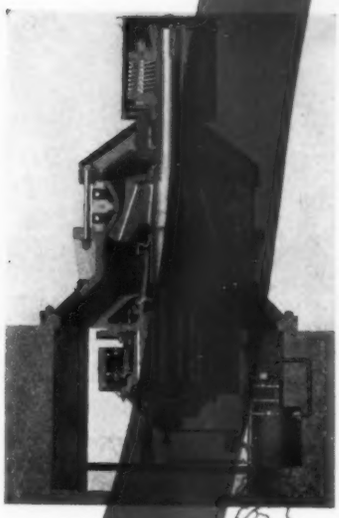
KVS Products include: Kilns, Coolers, Dryers, Crushers, Hammermills, Feeders, Screens, Conveyors, Elevators, Grinding Mills, Washers, Classifiers, Dust Collectors, and Air Separators.

We also furnish complete cement, rock crushing, sand and gravel, lime and dolomite plants.

KENNEDY-VAN SAUN MFG. & ENG. CORPORATION

All the Way"





KVS Ball Bearing Gearless Crusher for fine reduction. Low head type. Synchronous motor built in the pulley applies all power directly to crushing. Reversible concaves or grinding ring. Gives 100% more wear than any other crusher.

KVS Gyratory Gearless Short Shaft Standard Crusher for primary reduction. Force-feed lubrication. Easy accessibility. Synchronous motor, built in the pulley. Shows large saving in power over geared crusher.

Representatives in all principal cities in the United States and foreign countries, including Ejido 7-503, Mexico, D.F.

Write for Bulletins

2 PARK AVE., NEW YORK 16, N. Y.
FACTORY: DANVILLE, PA.

HIGH OPERATING EFFICIENCY and ECONOMY

Genuine Jeffrey
REPLACEMENT PARTS

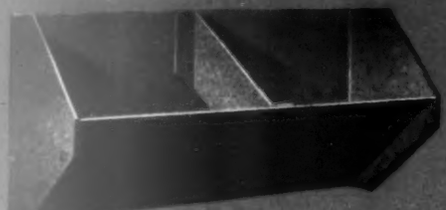
WHAT WE MAKE

Barrel Packers
Bucket Elevators
Car Pullers
Chains
Conveyors
Coolers
Crushers
Dryers
Feeders
Pulverizers
Screens
Shredders
Skip Hoists
Stackers
Transmission Machinery
Weigh Larries

WHY THEY'RE BETTER

Every Jeffrey maintenance part for material handling equipment is made to the same high standards as the original part plus any improvements that Jeffrey engineers and metallurgists are constantly developing.

Exact fit cuts down installation time. Top quality insures smoother performance, longer life.



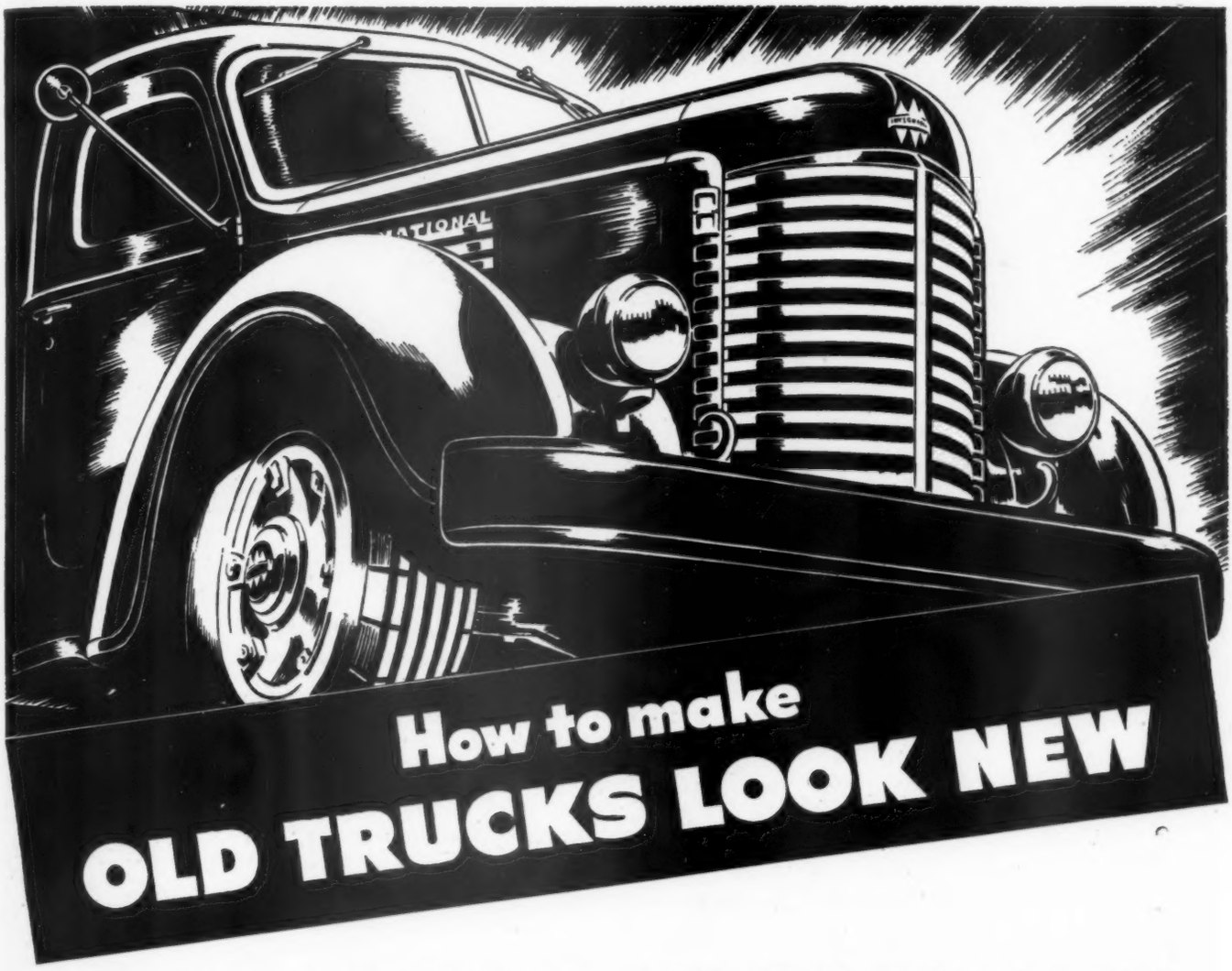
Look For The JM Trade Mark

THE JEFFREY MANUFACTURING COMPANY

917-99 North Fourth St., Columbus 16, Ohio

ESTABLISHED 1877 JM

Baltimore 1 Buffalo 2 Cleveland 13 Horton Milwaukee 11 Pittsburgh 22
Birmingham 9 Chicago 1 Denver 2 Houston 1 New York 7 St. Louis 3
Boston 16 Cincinnati 2 Detroit 13 Huntington 11 Philadelphia 3 Scranton 3 Salt Lake City 8



How to make OLD TRUCKS LOOK NEW

• Here's a way to make old trucks look new—quick. Drive them to your International Truck Branch or Dealer and say, "I want an Appearance Reconditioning Job done on these fellows."

And you'll get it, because sheet metal and other materials that were out because of the war, are back. You'll get perfect fitting new International fenders, radiator grilles, hood sheets, doors, glass, hardware, headlights, bumpers, bumper guards and seat cushions—just what you want to put your trucks in shape.

Next, paint jobs if the trucks need them—new paint to clean-up and brighten-up the whole trucks, and cause people to say, "There's one operator who certainly keeps his trucks looking swell."

The cost? Not great. The result? Marvelous.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois

Act now. Truck production has increased, but it will take many years to meet the demand. Get your trucks "Appearance Reconditioned" by your International Truck Branch or Dealer. Make 'em good advertisements for you while you get additional economical miles from them.

Get These Too When You Get Your Trucks

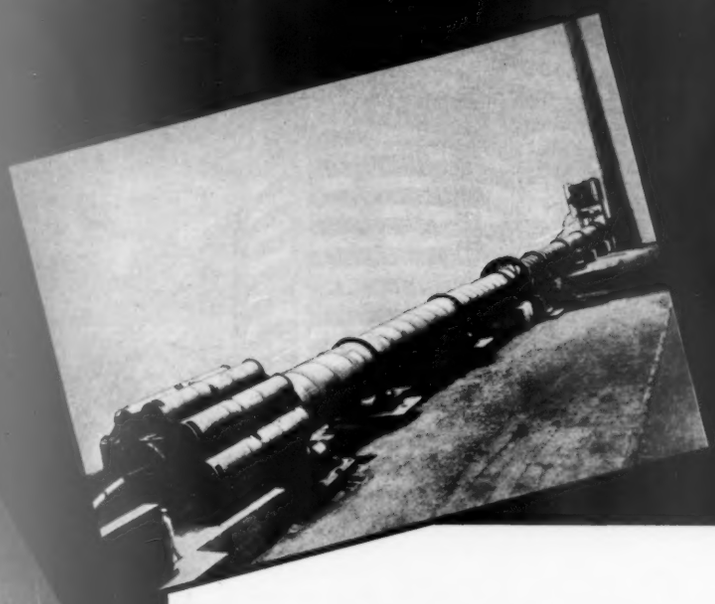
"APPEARANCE RECONDITIONED"

• Hot Water Heaters and Defrosters • Seat Covers Elston Electric Road Sanders • Saf-T-Step • SOS Fire Guard • Whiz Automotive Chemicals • Spot Lights, Fog Lights and Driving Lights • Clearance Lights, Flags, Flares, Directional Signals and other Safety Devices.

All available from your International Truck Branch or Dealer

INTERNATIONAL

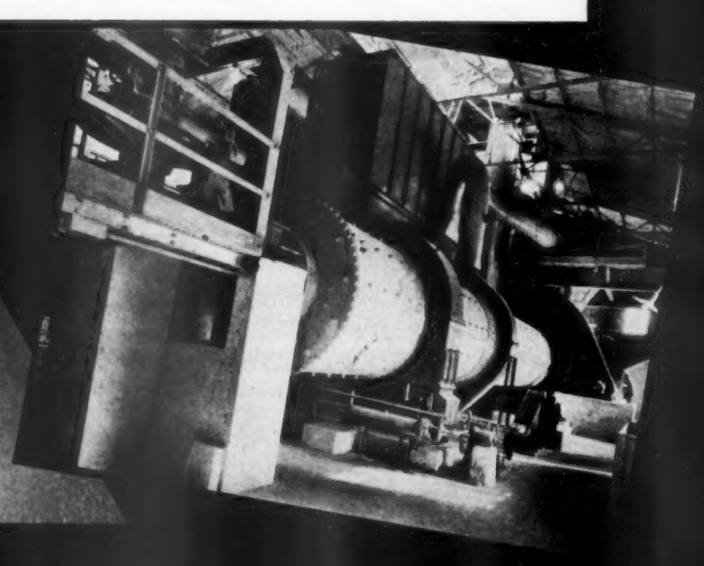
INTERNATIONAL Trucks



ROTARY KILNS

Machinery for Cement-Lime-Ore

In addition to a complete line of Rotary Kilns and Grinding Mills, F L. Smidth & Co. also manufacture Coolers, Pre-Coolers, Pre-Heaters, Recuperators, Air Separators, Agitators, Packers, Extractors, Feeders, Burners, etc. and their auxiliary equipment, for the manufacture of Cement, Lime, Ores, and Allied Products



GRINDING MILLS

F. L. SMIDTH & CO.

11 WEST 42ND STREET

CEMENT ENGINEERING
CEMENT MACHINERY

NEW YORK, N. Y.

Yes...it has been a long time since you've had an opportunity to look over your plant and plan for the modernization it probably requires. Almost five years of producing for war, using outmoded and frequently worn-out machinery, has created many problems that must be faced efficiently and quickly. By spring you will be asked again to operate at peak production to supply the biggest construction boom America has ever seen.

Between now and then, your planning must be quick and thorough . . . and accurate. A Robins Job-Engineer, bringing you the knowledge and experience of more than fifty years of materials handling problems, is available to you on request. A note on your letterhead will bring him to your office to help analyze your problems, and to suggest the type of machinery you need to operate at maximum efficiency and economy.

AMERICA'S ONLY *COMPLETE* MATERIALS HANDLING SERVICE

Hewitt and Robins unite to offer you 134 years of combined experience in Job-Engineered rubber products and machinery designed to answer every materials handling problem you may have.

ROBINS
CONVEYORS INCORPORATED
PASSAIC, NEW JERSEY
DIVISION OF HEWITT RUBBER CORPORATION

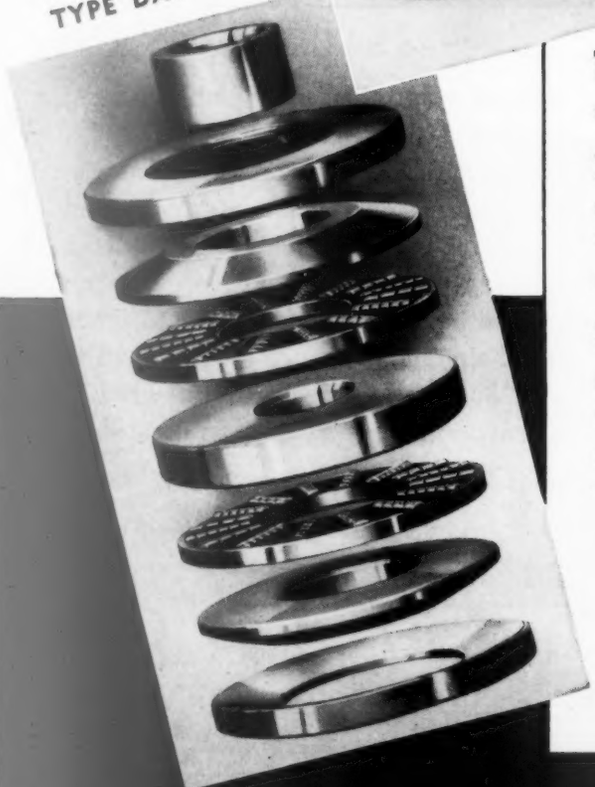
RIGHT ANGLE LOADING

Plus staggered rollers that will not "TRACK"...

TYPE T

TYPE AT

TYPE DAT



ROLLWAY

Solid-cylindrical-roller THRUST BEARINGS

When thrust loads are heavy . . . when maximum bearing capacity in minimum space is required . . . when the aim is to design "preventive maintenance" into the mechanism itself . . . Rollway solid cylindrical roller Thrust Bearings offer sound solutions to the basic problems. Here are the reasons why:

1. Rollway carries all loads at right angles to the roller axes.

2. Rollway solid-cylindrical rollers—staggered in position and varied in length, so as to cancel out "tracking"—are accurately spaced in machined-bronze retainers.

3. Thrust plates, held to extremely close limits of parallelism, afford a linear contact with the straight cylindrical rollers, doing away with Brinell effect and roller "pinch outs" with its consequent roller-end wear and rubbing friction.

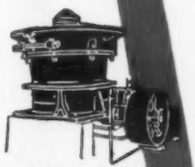
Six basic types in many sizes to choose from. Send a print or detailed description for free bearing recommendation.

ROLLWAY BEARING CO., INC.
SYRACUSE 4, N. Y.

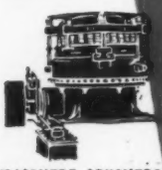
SALES OFFICES: Philadelphia • Boston • Pittsburgh • Youngstown • Cleveland • Detroit • Chicago • St. Paul • Houston • Tulsa • Los Angeles

IS YOUR PLANT READY for *peacetime competition?*

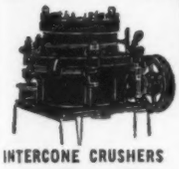
Complete modern Telsmith plant . . . producing both coarse and fine aggregates in several sizes.



PRIMARY BREAKERS



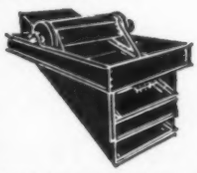
GYRASPHERE CRUSHERS



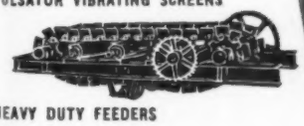
INTERCONE CRUSHERS

JAW CRUSHERS

SAND CLASSIFIERS



PULSATOR VIBRATING SCREENS



HEAVY DUTY FEEDERS

● RIGHT NOW your plant faces a changed market. Peacetime construction contracts are different. Your customers are different. Competition is keener. This calls for plant planning *now*—for rearrangement and additional equipment. For example, more re-crushing, screening or washing capacity . . . to produce the smaller sizes, in the quantities and quality your market demands. Do this with Telsmith equipment. It gives your plant this necessary product flexibility—boosts its output. Cuts power and maintenance costs. Telsmith equipment keeps your production costs down to a figure that insures you a good profit. Telsmith's 40 years of equipment-building complete-plant-engineering know-how is at your disposal. Write us in detail; or send for Bulletin E-15.

E-8R

TELSMITH Equipment

FOR SAND, GRAVEL AND ROCK CRUSHING PLANTS

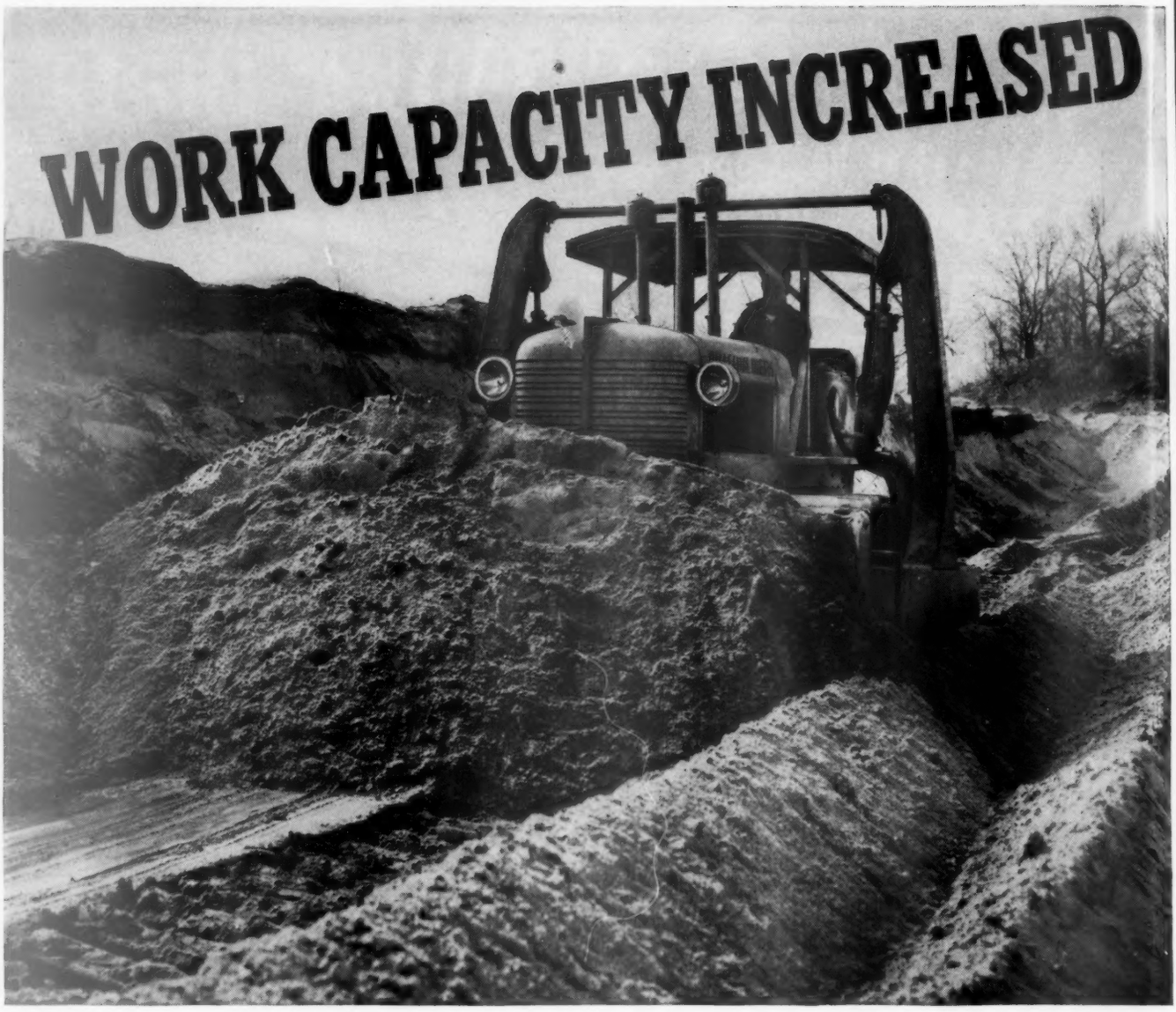
SMITH ENGINEERING WORKS, 504 E. CAPITOL DRIVE, MILWAUKEE 12, WISCONSIN

Cable Addresses: Sengworks, Milwaukee—Concrete, London

51 East 42nd St. New York 17, N.Y. | 211 W. Wacker Drive Chicago 6, Ill. | 713 Commercial Trust Bldg. Philadelphia 2, Pa. | 247 Third Street Cambridge 42, Mass. | Boelck Eqpt. Co. Milwaukee 3, Wis. | Mines Eng. & Eqpt. Co. San Francisco 4—Los Angeles 14

Brandeis M. & S. Co. Louisville 8, Ky. | Rish Equipment Co. Charleston 22, & Clarksburg, W. Va. | Rish Equipment Co. Roanoke 7, & Richmond 10, Va. | North Carolina Eqpt. Co. Raleigh and Charlotte 1, N.C. | Wilson-Weesner-Wilkinson Co. Knoxville 8, & Nashville 6, Tenn.

WORK CAPACITY INCREASED



Always a top-performer . . . the HD-10 2-cycle Diesel tractor now gives you *more* work capacity. Track is eight inches longer — which means over ten per cent increase in ground contact — MORE TRACTION. Addition of approximately one-half ton in weight, properly distributed for better balance, is another reason for its improved performance. A longer and heavier truck frame and an extra truck roller on each track reduces wear and tear.

Put this new, better-than-ever HD-10 tractor on your stripping, road-building, cleaning-up work. Watch it handle bigger loads faster, move more yardage at less cost per yard. See your Allis-Chalmers dealer. Place your order now for earlier delivery.

Popular Model HD-10 is ideal for bulldozing, operating scrapers, pulling heavy equipment. Provides 86.6 drawbar h.p., has six forward speeds, two reverse.

★ ★

HD-10
WITH LONGER TRACK
Gives You—
IMPROVED TRACTION
IMPROVED BALANCE
IMPROVED RIDING
IMPROVED PERFORMANCE

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Thermoid —Key to Progress in Many American Industries

OLD-STYLE SCRAPER USED IN HIGHWAY CONSTRUCTION

MODERN SCRAPER USING THERMOID HYDRAULIC CONTROL HOSE

SINCE 1880, Thermoid has contributed to the progress of American Industry. In many fields of business, Thermoid Products play an indispensable part. The development of Thermoid Powerflex Wire Braid Hydraulic Control Hose has widened and accelerated the use of hydraulic controls on many types of equipment requiring flexible connections. The Thermoid Line* is the result of 65 years of research and experience that not only has kept pace with the demands of Industry, but in many cases anticipated industry's needs. The Thermoid Line* of belting and hose for materials handling and power transmission may contain the key to another step forward in the improvement of your process and the reduction of your costs — "It's Good Business to Do Business With Thermoid."

***THE THERMOID LINE INCLUDES: Transmission Belting • F.H.P. and Multiple V-Belts and Drives • Conveyor Belting • Elevator Belting • Wrapped and Molded Hose • Sheet Packings • Industrial Brake Linings and Friction Products • Molded Hard Rubber and Plastic Products.**

Thermoid Rubber

DIVISION OF THERMOID COMPANY
TRENTON 6, NEW JERSEY

Contributor to Industrial Advancement Since 1880

PIT AND QUARRY

DECEMBER, 1945

Vol. 38 No. 6

CONTENTS

Editorial: Can Wage Rates Be Raised? 46
News of the Industry 49
Washington News Letter 56
Many Special Problems Overcome in Newest Mexican Cement Plant 57
A.I.M.E. Industrial Minerals Division Meets ... 64
Alabama Limestone Plant Contributor to T.V.A. Neoprene Output 65
Compressed Air a Production Factor 67
Impact Crusher Increases Agstone Output ... 68
Topeka Firm Has Novel System for Handling Fines 70
Continuous Hot-Mix Plant Sets Record 71
Use of Lime for Water Purification 73
River Furnishes Plentiful Material Supply 74
Mechanize Quarry at M. J. Grove Lime Plant 75
The Lime Plant Operator 77

THE CONCRETE MANUFACTURER

News of the Industry 107
Promoting the Farm Market for Concrete Products 109
New System Speeds Block Handling 111
Georgia Stop-Gap Block Plant to Stay 113
Improved Operating Methods Spell Success .. 115
Temporary Plants Solve Supply Problem 117

Personal Mention 79
Obituaries 80
Legal Decisions 82
Traffic News 88
New Machinery and Supplies 91
Trade Notes 95
Trade Literature 99

MEMBER AUDIT BUREAU OF CIRCULATIONS

PIT AND QUARRY IS INDEXED IN THE ENGINEERING INDEX

Published on the first of each month for producers and manufacturers of Cement, Crushed Stone, Gypsum, Lime, Sand, Gravel and other nonmetallic minerals. Copyright 1945 by Complete Service Publishing Co., 538 S. Clark Street, Chicago 5, Ill.

H. W. BAUMGARTNER
President

STANLEY A. PHILLIPS
Vice-President and Directing Editor

WALTER E. TRAUFFER
Editor

HARRY F. UTLEY
Pacific Coast Editor

WILLIAM M. AVERY
Field Engineering Editor

M. E. ANSEL
Associate Editor

FLOYD C. LEVERETTE
Assistant Editor

W. T. KLUSSMAN
Secretary

RAY L. SMITH, JR.
Circulation Manager

●

CHICAGO BUSINESS OFFICE
538 South Clark Street
Chicago 5, Illinois
Telephone HARrison 8558
JAMES E. MONTGOMERY
Advertising Manager
EARL C. KAYE
Representative
RUSSEL L. MILES
Field Manager, Pit and Quarry Handbook

NEW YORK OFFICE
Room 1235, 101 Park Avenue
New York 17, New York
Telephone Caledonia 5-4438
W. A. WILSON
Eastern Advertising Manager
CHARLES H. BUSSMANN
Assistant

CLEVELAND OFFICE
712 The Arcade
Cleveland 14, Ohio
Telephone CHerry 4432
D. R. EGBERT
Central Advertising Manager

PACIFIC COAST OFFICES
318 North Lockheed Avenue
Whittier, California
HARRY F. UTLEY

1007 Terminal Sales Building
Portland 5, Oregon
J. A. CONVERSE

With compressor oils that don't form hard carbon deposits

GET these important benefits . . . assure fewer repairs and replacements, longer and more trouble-free service between overhauls, better performance at lower cost . . . by lubricating your air compressor with *Texaco Alcaid, Algol or Ursa Oils.*

Texaco Alcaid, Algol and Ursa Oils are products born of many years of intensive research by The Texas Company in the field of air compressor lubrication. They are made from carefully selected crudes. The lubricating fractions are processed by modern Texaco methods in one of the world's largest refineries under the constant supervision of trained Texaco technicians. This is your assurance of uniformly high quality no matter where you buy them.

Texaco Products and Lubrication Engineering Service are available through more than 2300 Texaco distributing plants in the 48 States. Contact the nearest one, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants and Fuels

TUNE IN THE TEXACO STAR THEATRE WITH JAMES MELTON SUNDAY NIGHTS ★ METROPOLITAN OPERA BROADCASTS SATURDAY AFTERNOONS

EDITORIAL

Can Wage Rates Be Raised?

THE Labor-Management Conference, which has just come to an end, did not contribute anything constructive or significant toward either an understanding or a settlement of the controversies over wages which have arisen in recent months. Organized labor is still demanding in certain cases a 30-per cent. increase in wage rates, and employers in those industries are still asserting that the granting of such an increase is impossible. The conference closed without having shown any willingness to go on record on the subject of wages and without evincing faith in any principles other than those of conciliation and arbitration.

The results are disappointing not only to C.I.O. President Philip Murray because of the conference's rejection of his resolution asking for substantial and immediate increases in wages and to the American Federation of Labor-United Mine Workers-Railroad Brotherhoods coalition because of its failure to adopt their proposal for "general wage increases," but also to the general public, which had hoped for something more tangible than an approval of collective bargaining, conciliation and arbitration that threw the whole problem of wages, prices and profits right back into the laps of individual employers and workers' organizations. Eric Johnson, president of the United States Chamber of Commerce, showed that he was aware of this failure when he said that the results "are disappointing to the American people."

The question "Can wage rates be raised?" can not be answered either affirmatively or negatively, if it is applied to all industries without exceptions. Just as there are instances where apparently the maximum demands for wage increases can be met without price increases, there are also, of course, cases where no increases can be made at present price levels. It may be true that large sections of industry can distribute among their workers an even larger share of their gross income than acceptance of the 30-per cent. demands would require, but it does not follow that all industries can absorb such proposed increases or any approaching them in amount.

Before the Labor-Management Conference opened, the Department of Commerce released a report of its Division of Research and Statistics on the general ability of industry to pay higher wages. This report revealed that in one industry, wherein organized labor has demanded a 30-per cent. increase, a rise of 15 per cent. could be granted immediately and another increase of 10 per cent. could be made in 1947 without resorting to an increase in prices and with resulting profits even higher than those made in any peace-time year. The report stated that the industry referred to "is not an average case, but it is illustrative of industries with high earning power under conditions of volume operations." In dealing with the subject of volume production and its relation to the ability to pay higher wages the report said that "for a given set of cost assumptions in a particular year profits rise much more rapidly than production. Thus, a sixfold increase in production yields a profit 13 times higher." The profits realized in this particular industry, the report stated, would be higher not only before taxes but after taxes.

Referring to similar studies made of other industries, the report said that "it is apparent that the present cost-price relationships are such throughout industry that a basic wage increase is possible without raising prices. For 1946 a general increase of 10 per cent. is possible.

Economists understand, as well as do workers and employers, that high wages and low prices not only increase profits but contribute toward the attainment of full employment, because wages pass quickly into the purchase of consumer goods whereas profits in the form of dividends are held awaiting favorable opportunities for their investment in the form of additional production capacity. Raising workers' incomes increases the demand for those commodities because of the larger purchasing power it creates. The increased demand stimulates production and reduces the labor cost per unit of output, thereby increasing the total amount of profit and the rate of return on invested capital. It also has the effect of encouraging the investment of capital in new enterprises or in the expansion or conversion of existing ones, thus contributing still more toward the attainment of full employment and the vastly greater purchasing power which that would provide.

WE earnestly hope that the failure of the Labor-Management Conference to adopt any new constructive principles in the field of labor relations, instead of discouraging the public and those who participated in it, will lead to the immediate calling by the President of another meeting in which the interests of employers, workers and the "general public" will be represented. The agenda of such a conference should include as "musts" a free discussion of wages, prices and profits, since these factors are inseparably linked in a private-enterprise economy and can not be disposed of individually as if they were unrelated, and a program for action. No such conference can possibly succeed in solving the problems of labor relations, or even in contributing measurably toward their solution, unless those who take part in it are prepared and willing, as a condition of their participation, to discuss intelligently and to adopt without fear an integrated wage-price-profit policy. To shirk responsibility by throwing these problems back to employers and employees will only prolong the reliance of both groups on the use of the strike or the lockout as the most effective weapon for settling disputes that may arise between them. They must be faced squarely by the public as well as by the disputants and a reasonable and just solution found by democratic means. If we fail to do that, we must not be astonished if the whole subject of labor relations should be transferred to the field of political action by those who consider themselves oppressed.

SCHRAMM COMPRESSORS furnish

Ample COMPRESSED Air Any Time, Anywhere

for all Quarry and Construction Work

No. 315 Diesel engine driven SCHRAMM Compressor operating three rotating drills with the housing doors in place.

"CLOSED DOOR PROTECTION"

Quarrymen, construction workers and all air-tool operators are enthusiastic about the modern features of SCHRAMM Compressors.

The abundance of sustained power, overall workability in any conditions and the safety door features make SCHRAMM "first choice" of practical operators.

SCHRAMM machines are uniformly water-cooled, and can operate at top efficiency even with the compressor doors locked.

This protective feature eliminates theft of parts, and keeps out grit and dust.

SCHRAMM units are a *safe bet* to deliver production and economy records under all working conditions.

Write for Catalog No. 45

"THE POWER BEHIND THE DRILL"

SCHRAMM INC.

THE COMPRESSOR PEOPLE • Westchester, Pennsylvania

GEORGE E. RUPPERT
PRESIDENT
J. RUPPERT SCHALK
VICE PRESIDENT

JACOB RUPPERT
BREWERY
1639 THIRD AVENUE, NEW YORK 28
TELEPHONE ATWATER 9-1000
N.Y.S.L.A.LIC. No D-1

H. GARRISON SILLECK, 3rd
SECRETARY
FREDERICK M. LINDER
TREASURER

Buell Engineering Co., Inc.
70 Pine Street
New York, N. Y.

April 9, 1945

Gentlemen:

Seven years ago we built our power plant. When we were considering the installation of a system to collect fly ash, our engineering department recommended Buell equipment.

We are now pleased to say that the Buell Fly Ash Collectors have efficiently done the job for which they were installed. Moreover, during the six and a half years in constant operation, it has not been necessary to expend one cent for mechanical maintenance or repairs.

In view of this performance, it is my pleasure to tell you that we consider Buell Fly Ash Collectors a highly satisfactory plant investment.

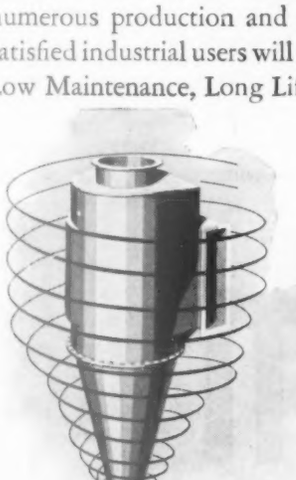
Very truly yours,
JACOB RUPPERT

GER: H

George E. Ruppert
President

"MAKE MINE RUPPERT"

• BUELL DUST RECOVERY SYSTEMS are used throughout industry in the collection or reclamation of many kinds of dust, in numerous production and process operations. Hundreds of satisfied industrial users will attest to Buell's—"High Efficiency, Low Maintenance, Long Life."



buell
DUST RECOVERY SYSTEMS

BUELL ENGINEERING COMPANY, INC.
Suite 5000, 12 Cedar Street, New York 5, N.Y.
Sales Representatives in Principal Cities

DESIGNED TO DO A JOB, NOT JUST TO MEET A "SPEC"

Associations Rule to Hold Exhibits Only In Alternate Years

An important decision approved at the meetings of the directors of the National Sand and Gravel Association and the National Ready-Mixed Concrete Association in Chicago (October 18 and 19, respectively) ordered that exhibitions be held in connection with the associations' annual conventions only in alternate years, beginning in 1948. This arrangement will make possible the booking of conventions in odd years at cities not having adequate exhibition facilities.

Extension Planned for Famous Old Turnpike

Governor Edward Martin has announced that Pennsylvania intends to extend its famed Harrisburg-Pittsburgh superhighway to Philadelphia or to construct a modern multiple-lane connecting link from the state capital to Philadelphia. He revealed that the state had three plans to modernize the highway system from the eastern terminus of the Pennsylvania Turnpike at Middlesex, 16 miles from Harrisburg.

Governor Martin also discussed the possibility of extending the turnpike westward to the Ohio border and of making both densely populated and rural areas readily accessible to the motoring public.

San Francisco Concern Reopens Phosphate Mine

Shipments of phosphate have begun from the Waterloo Mine near Montpelier, Idaho, closed since 1933, but recently reopened by its owners, the San Francisco Chemical Company. Increasing demands for the phosphate rock for fertilizer induced the company to resume operation.

A building which houses a checking office and a warehouse is being erected at the millsite, and a new mill with a daily output of approximately 300 tons is already under construction. Facilities include a Raymond low-side roller mill (Number 6669) and Fuller Kinyon pumping equipment for handling the pulverized material.

Coming Events

January 22-24, 1946—Cincinnati. Annual convention, National Sand & Gravel Association, Netherland Plaza Hotel.

January 23-25, 1946—Cincinnati. Annual convention, National Ready Mixed Concrete Association, Netherland Plaza Hotel.

January 27-31, 1946—Chicago. Annual meeting, Associated Equipment Distributors, Edgewater Beach Hotel.

January 28-30, 1946—Cincinnati. Annual convention, National Crushed Stone Association, Netherland Plaza Hotel.

January 31-February 1, 1946—Cincinnati. First annual convention, Agricultural Limestone Division, National Crushed Stone Association, Gibson Hotel.

February 25-28, 1946—Chicago. Annual meeting, American Institute of Mining and Metallurgical Engineers, Palmer House.

February 25-March 1, 1946—Pittsburgh. Spring meeting, American Society of Testing Materials.

April 3-5, 1946—Chicago. Annual meeting, Midwest Power Conference, Palmer House.

June 24-28—Buffalo. Annual meeting, American Society of Testing Materials, and exhibit of testing apparatus and related equipment.

Construction Booms As Government Lifts Wartime Restrictions

Substantial gains in construction contracts in October, probably attributable in part to the removal of all federal restrictions on building on October 15, were reported for the 37 states east of the Rocky Mountains today by the F. W. Dodge Corporation. The total valuation of all contracts awarded during the month was $316,571,000, a gain of 13 per cent. over September and 118 per cent. over October, 1944.

During the period October 16-31, immediately following removal of W.P.B. Limitation Order 41, contracts totaled $175,771,000 as compared with $71,556,000 in the corresponding period of 1944. For this comparative period, nonresidential construction this year was up 216 per cent., residential building gained 172 per cent., and heavy engineering construction increased 36 per cent.

The construction volume for the first ten months of the year aggregated $2,598,531,000 as compared with $1,640,685,000 in the same period of last year. Construction for private accounts, as differentiated from publicly-owned construction, represents 54 per cent. of the total so far this year. During the first ten months of last year privately-owned construction amounted to only 26 per cent. of all construction.

Residential construction in the first ten months amounted to $388,-959,000, a gain of 22 per cent. over last year. Nonresidential building in the same period amounted to $1,-449,185,000, an increase of 104 per cent. over the same period in 1944.

U. S. Lime Products Corporation of Sloan, Nevada, has awarded the contract for the construction of quarry facilities and a primary and secondary crushing plant at Apex, California, to cost about $85,000.

Standard Gypsum Co. Plant at Richmond Under Construction

Preliminary work has already started on the new Richmond plant of the Standard Gypsum Company of California, and general construction will get under way within the next few weeks. Piling is now being driven for plant foundations and deep-water docking facilities. The construction program also calls for a wallboard plant with a capacity of 200,000 square feet per day, a calcining plant, steam plant, raw material storage space, and other buildings.

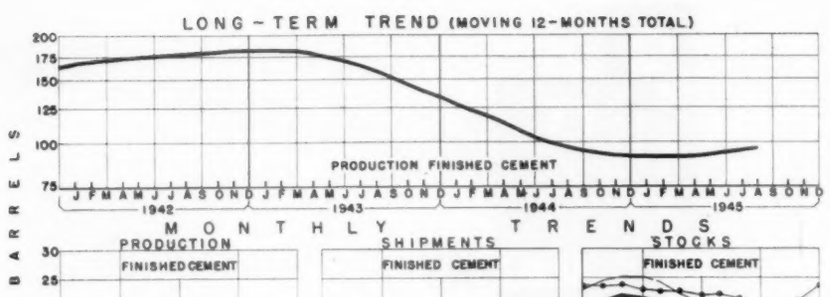
The new development is an outgrowth of a deal consummated between Henry J. Kaiser and the Standard Gypsum Company in which Mr. Kaiser agreed to lease, develop, and expand the plants and the market for Standard Gypsum products.

The processing plants will secure gypsum from deposits located on San Marcos Island in the Gulf of Lower California, Mexico. These deposits, estimated to contain 500,000,000 tons of gypsum, are operated through a long-term concession from the government of Mexico. The Richmond plant will start producing wallboard, gypsum lath, hardwall plaster, agricultural gypsum, pebble gypsum, tile and other gypsum products as soon as construction is completed. The company's Long Beach facilities, curtailed during the war due to a lack of ocean shipping, will be reconditioned and expanded in the near future.

Management-Labor Effort Pledged to Reduce Mishaps

War on accidents was declared at the Pennsylvania State-Wide Industrial Conference held in Harrisburg, December 4. Labor and management were committed to 100 per cent. cooperation to reduce the incidence of industrial accidents. Among the speakers were Brigadier General Henry A. Renninger, past president of the National Safety Council and present director of safety at the Lehigh Portland Cement Company of Allentown, and John Rice, Jr., Vice-President of the General Crushed Stone Company of Easton.

Employers were urged to tabulate information for the 1945 state-wide accident prevention contest on blanks distributed to 50,000 plants.



The long-term trend of activity in the Portland cement industry, as indicated in the chart above, continued upward through August. Production of 9,921,000 barrels of finished cement in August, 1945, reported to the Bureau of Mines, United States Department of the Interior, was 10 per cent. above the output in August, 1944, and 7 per cent. above the July, 1945, total. The August record of mill shipments of 11,467,000 barrels was 7 per cent. higher than in August, 1944. Mill stocks continued to decline and the total of 15,940,000 barrels at the end of August, 1945, was 14 per cent. below that of August, 1944. Clinker production for August, 1945, was 11 per cent. above the output in August, 1944, and 9.7 per cent. above the July, 1945, total. Stocks continued to decline as production did not meet demands. Stocks of 4,508,000 barrels on August 31 were 15 per cent. below that of August, 1944, and 300,000 barrels below the July 31, 1945, total.

Marquette Cement Manufacturing Company Leases Building Site to Enlarge Facilities

The Marquette Cement Manufacturing Company has leased from the Chicago Sanitary District a building site on 8⅓ acres of unimproved land on the Sanitary Ship Canal.

W. A. Wecker, president of Marquette, stated that the company intends to erect on this site a modern, dustless cement storage and shipping plant with 20 or more concrete storage silos having a total capacity of approximately 200,000 barrels. "This facility," said Mr. Wecker, "is required by Marquette to enable it to continue to compete with existing distribution and service facilities of other producers and to better serve its many customers in the Chicago area. This particular site," said Mr. Wecker, "gives Marquette the advantage of waterway transportation of its products in bulk, delivered by the Company's own fleet of barges and modern towboats from its plants at Oglesby, Illinois, on the Illinois River, with ready redistribution in carload quantities, on the more than 600 mile network of the Belt Railway Company of Chicago." Volume of business through the plant is expected to reach $1,500,000 annually in years of peak consumption. A similar project is planned for Milwaukee.

New Rock Wool Plants Slated to Open at Tacoma

Two new rock wool operations, Independent Insulations, Inc., and the Everock Products Company, are scheduled to begin at Tacoma, Washington, before the first of the year. At the Independent location two furnaces, each with a capacity of 50 tons daily, are being installed, and provision has been made for three additional units later. Everock will produce insulation from natural rock and lime at an estimated initial rate of 12 tons daily, an output which is expected to be doubled eventually.

Ideal Cement Co. Expanding Facilities At Devil's Slide

The Ideal Cement Company of Denver has announced the construction of increased storage and shipping facilities at its Devil's Slide, Utah, plant. The cost of the new facilities, including machinery and equipment, will probably run in excess of $300,000.

In addition to the improved storing and packing facilities, construction of which has been started since V-J Day, a complete rehabilitation of the entire plant is planned as rapidly as conditions will permit. The announced objective is to maintain a flexibility of operations which will permit the servicing of all types of construction jobs promptly, giving full consideration to the more stringent specifications for cements which have been developing within recent years.

Warner Co. Wins Awards In 1945 Safety Contest

The combined efforts of management and labor of the Warner Company, Philadelphia, Pennsylvania, have resulted in that company being the recipient of safety awards presented by the Philadelphia Safety Council and the U. S. Department of Labor. At the beginning of 1945, it was announced that all the Warner plants would participate in the Department of Labor's 40 per cent. Accident Reduction campaign and the Philadelphia Inter-Plant Safety Contest. The company was able to show a 48 per cent. decline in accident frequency throughout the entire organization for the first six months of 1945 as compared with the same period in 1944; thereby becoming eligible for awards in both contests. Figures for the comparative periods are as follows:

	1945	1944
Gravel Plants	0	8.33
River Transportation	24.75	65.25
McCoy Plant	44.72	102.50
Cedar Hollow Plant	34.41	47.50
Chauffeurs	14.44	0
Berks Street Plant	0	0
Christian Street Plant	0	0
Morrisville Plant	0	0

The spirit of competition was encouraged among the employees as a means of promoting safety consciousness. In addition, each plant was given, at the time the campaign was announced, its previous accident record and also the frequency which must be achieved in order to have a 40 per cent. reduction. Monthly progress reports were then sent to all locations, discussed with superintendents and foremen, and posted on bulletin boards for the employees. The Warner Company attributes its success to this individual plant method of guidance, the competitive spirit, and the cooperation of all personnel.

A.S.T.M. Annual Meeting To Be Held at Buffalo

The Executive Committee of the American Society for Testing Materials has confirmed an earler decision to hold its 49th annual meeting in Buffalo from June 24 to 28, 1946, and in conjunction therewith to have its seventh exhibit of testing apparatus and related equipment.

The 1946 Spring meeting of the society will be held in Pittsburgh during the week of February 25 to March 1.

Large-Scale Operations At U.S., Whittaker Plants

Two of Washington's largest rock quarrying operations now in production are located near Naselle—the huge plant of the D. F. Whittaker Company and the U. S. Army Engineers' quarry ten miles away. The former plant is turning out crushed road material for the Ocean Beach highway at the rate of 150 to 200 cubic yards per hour. The contract calls for 140,000 cubic yards of the crushed material.

At the federally-operated quarry the largest power shovel ever used in the area has been installed. It can raise seven cubic yards of rock at one lift.

Johns-Manville Expansion To Include Laboratory

Johns-Manville Corporation executives have announced plans for the erection of a large research laboratory for the development of new building materials, as one part of a $40,000,000 expansion program. The research center, the first unit of which already is under construction, is planned ultimately to be a group of six buildings located near Bound Brook, New Jersey, across the Raritan River from the Johns-Manville plant at Manville, New Jersey.

The Grants Pass Lime Products Company is reported to be building a 500-ton-per-day limestone plant at Marble Mountain, Oregon. Robert D. MacAfee is in charge of construction.

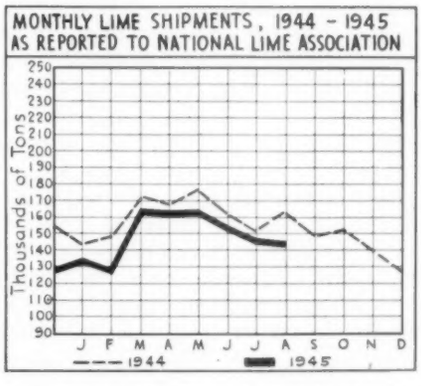
Relaxing of Curbs On Use of Explosives Announced by Sayers

Wartime Federal regulations governing non-military explosives and certain ingredients of explosives are being relaxed and individual licenses no longer are required for transactions in explosives, Dr. R. R. Sayers, Director of the Bureau of Mines has announced.

One of the most important home-front emergency security measures in effect since the declaration of war by the United States on December 8, 1941, the Federal Explosives Act, is no longer necessary as a wartime measure and the Explosives Control Division of the Bureau's Health and Safety Branch, which administered the Act during the war, is being liquidated.

More Agstone Plants Urged for Mississippi

At the dedication of the Mississippi State Lime Crushing Plant Number 2 at Cedar Bluff, Mississippi, Governor Bailey stressed the need of agstone plants in the state to enrich the soil of its farms. The $50,000 plant is producing 300 tons of agricultural limestone a day.



According to the data collected by the National Lime Association, 54 companies in August, 1945, shipped 143,322 tons of lime (85,554 quicklime; 57,768 hydrate). Reporting companies represent 43.2 per cent. of the association members' total capacity of record. Based on PIT AND QUARRY'S estimates for the remainder of the industry, the total shipments for the month by all plants were approximately 364,000 tons. Shipments of lime by users for August, 1945, were:

Use	Quicklime (tons)	Hydrate (tons)
Agricultural	1,588	14,675
Building	7,202	18,727
Chemical	76,764	24,336
	85,554	57,768

Highway Financing Delays Projects Planned by 14 States

Recent reports on state highway construction programs indicate that the method of financing presents the chief problem to be solved before the vast projects can become a reality. Kentucky and Pennsylvania have recently passed legislation curbing the diversion of highway funds for other than highway construction and maintenance; the latter was authorized to float a $50,000,000 bond issue for this purpose.

A report has been submitted by the New York City Park Commissioner for a five-year construction program of arterial highways and parkways in that city at a total cost of $285,000,000. Construction of a $202,000,000 "thruway" from New York City to Buffalo is scheduled to start in the Spring. This project is planned as an express highway with opposing traffic lanes separated by no grade crossings. Governor Thomas E. Dewey declared it may be necessary to finance this with toll charges and state contributions if a constitutional way to accomplish this could be found. In the Spring, Maine also will start construction of the first 50-mile segment of a projected $100,000,000 superhighway to consist of five sections.

Illinois has under consideration three high-speed highways to run between Chicago and St. Louis, Chicago and Rockford, and from East St. Louis to the Indiana line. In Chicago, superhighway construction plans amount to more than $138,000,000. The Virginia State Highway Commission has submitted a report on a 20-year program of modernization of primary highway systems, the total expenditure of which will be approximately $422,863,000. The commission anticipates highway revenues to reach $795,211,000, plus $86,143,000 in federal aid, over the next 20 years. In addition to the primary system, there will be a need for an expenditure of a total of $80,768,000 for construction of secondary roads in the next 20 years.

The legislature of Montana has authorized the borrowing of $12,000,000 for highway improvements, while North Dakota, New Mexico, South Carolina, and West Virginia have allocated sums up to $12,360,000 for their respective programs. It is intimated that the $5,000,000 bond issue proposal, rejected by the Delaware legislature, may be reconsidered, if necessary, to insure that state's participation in the federal-state program. Louisiana has approved a $15,500,000 fund, to be combined with the federal aid, to give a total of $30,000,000 towards the $350,000,000 expansion program of that state. The Colorado State Highway Advisory Board is investigating means to finance its $150,000,000 long-range highway program.

In addition to the $3,000,000,000, federal-state highway program which is forging itself into a reality, it is estimated that $1,500,000,000 will be spent annually on county roads and city streets outside the federal-aid system. Each state is concerning itself with the financial problems involved and each is seeking satisfactory and constitutional means of acquiring sufficient highway revenue to realize its expanded construction program.

Russia Gets Hydrators For Special Uses

Scheduled for shipment to Russia on November 19 were three combination portable hydrate and milk of lime machines built to order by the Lime & Hydrate Plants Company of York, Pennsylvania. The unique feature of the units is that they are portable, the first of their type. They will be used for battlefield decontamination, for building operations, orchard spraying, and the manufacture of milk of lime for sugar.

One of the Russia-bound machines

Idaho mining interests have laid preliminary plans for the construction of a $2,000,000 phosphate fertilizer operation, for which they will seek federal aid. Tentative proposals call for a phosphate rock processing plant at Border, Idaho, and an acidulating plant (to use acid from northern Idaho mines) at Pendleton, Oregon, or Walla Walla, Washington. Idaho is said to have the largest phosphate deposits in the world.

Plan Lehigh Plant To Make Cement from Minnesota Marl

The discovery of marl deposits in Minnesota has led to the formulation of plans by the Lehigh Portland Cement Company of Allentown, Pennsylvania, to erect a plant near Monticello, Minnesota, which will use the marl for the production of an estimated 500,000 barrels of cement a year. This material is to be obtained from four Minnesota lakes —Long, First and Second, which are said to contain deposits 52 feet deep, and Ottertail Lake. The total area covered by these lakes is about 250 acres.

Celotex Expansion Begun at 5 Plants

Celotex Corporation has launched upon a major expansion program involving five plants. At Lagro, Indiana, and Detroit, rock wool plants have been acquired and extensively improved. Also at Lagro, a new building is under construction for the manufacture of fireproof acoustical products. The company has acquired a large gypsum plant, as well as mines and gypsum reserves, at Hamlin, Texas; and at Metuchen, New Jersey, a brick siding operation is being enlarged. In addition, comprehensive plans are being prepared for increased production and efficiency at the main Celotex plant, located at Marrero, Louisiana.

Warner Company Plans Big Expansion Program

Among new projects announced by the Warner Company of Philadelphia in its long-range improvement plans is the addition of a 100-ton, 660-hp. Diesel-electric locomotive, built by the Baldwin Locomotive Works—to be used for hauling sand and gravel. The firm will also purchase 22 trucks, all to be equipped with 6-cubic-yard high-discharge agitator bodies. The Dravo Corporation of Pittsburgh is to furnish ten 1,000-ton steel barges.

A Number 5½ Nordberg crusher and a 4- by 12-foot, two-deck Low-Head Allis-Chalmers screen also will be installed. At the concrete plants in Philadelphia and Morrisville, Pennsylvania, and Wilmington, Delaware, additional cement bins will be constructed; and improvements are to be made on the Cedar Hollow rotary kiln operating on dolomitic lime.

New Safety Poster Series for Cement, Quarrying Industries

A National Safety Council bulletin announces a new series of posters designed for the cement and quarrying industries. Twelve in number, the two-color posters are available in various quantity lots and in two sizes each. In addition to the number shown, the following hazards and corresponding safeguards are featured: locking conveyor covers; guarding conveyor nip points; using life lines and safety belts when scaling; oiling only idle machinery; using insulated tongs; staying clear while loading trucks.

New Publication Issued On Asphaltic Concrete

The Asphalt Institute has recently published a *Manual on Hot-Mix Asphaltic Concrete* which is described as a complete text on the design of hot-mix asphaltic concrete paving and similar applications. Copies of the 112-page volume are available to officials, engineers and technologists without charge, upon application to the Asphalt Institute, New York 17, New York.

The Victory Fluorspar Mining Company, located near Rosiclare, Illinois, has been purchased by Martin Scherwin, of Tucson, Arizona, one of the three partner-owners.

British Quarry Operator Describes Status Of Industry under War, Post-war Conditions

One of our English readers, F. Bursill, secretary of Sandhill Quarries, Ltd., Bush House, Headington, Oxford, recently gave us some interesting information on present conditions there. Under the heading "How Peace Affects the Pit and Quarry Trade in England," Mr. Bursill said:

I write to let you know how peace, when declared in England, re-acted on the pit and quarry trade in the County of Norfolk, where our own pit is situated.

We produce hoggin, sand, ballast, and screened wholestone or flints down to 1½ to ⅜-inch stone, and we screen 350 yards per day.

From June, 1943, to May, 1945, we had been supplying the U.S.A. aerdromes in this district with an average of 4,000 to 5,000 yards of material for making up runways etc., per week, under contract with our Air Ministry as purchasers, and in addition, our County Council had been taking wholestone to make up the roads to the aerdromes.

At the peace signal all work stopped and everyone had a two-day holiday, work on the aerdromes ceased, and the work on the roads eased up, and then we were thrown into a general election.

From this stage all work stopped, everyone waiting to see what the new government would do; contracts in hand were held up; some pits that were opened solely as a war measure closed down immediately; one or two of these gents in their hurry to get out even forgot to pay their bills.

We members of the Association just waited to see what would happen. Our output dropped from 5,000 yards per week to less than 200 yards. This certainly gave us an opportunity to overhaul machinery, make additions, and stock pile, ready for a fresh start. This has only just commenced during the last seven days, and our output has gone up to 500 yards in the past seven days.

On Monday of this week, the Government have stated that they intend to make all roads in this country safe for people to use; also there is some hope of a definite housing policy being started at once, but only for municipalities. The private speculator or builder will have to wait until sufficient houses are built to rent before they will be allowed any quantity of material or labour to commence operations. This should lead to an increase of trade for pit and quarries generally.

September 30th saw the end of the permit question, as far as the purchase of new machinery was concerned. This had held up our work considerably, especially where excavators were concerned. For over four years, we had to hire from hiring firms. This was a short-sighted policy on the Government's part, as a good portion of the excess profits was paid over to these firms, instead of going into the Government's pockets.

Pits are still under the Essential Works Order, and we have to send in monthly returns of output and labour. The control of pit head prices is still under consideration.

Now that our people have had an opportunity of seeing the motor roads in Europe, we hope that the same idea will be adopted in this country, as our general road communication to the big cities and towns is practically 100 years behind the times.

Seismograph Developed For Quarrying Industry Used for Atomic Bomb

Although they were unaware of it at the time dynamite users in quarry and contracting work made an indirect contribution to the test of the atomic bomb on July 16, 1945. This was through the use of the Leet seismograph developed by Professor L. Don Leet, primarily for the registration of vibrations from dynamite blasts and industrial sources.

Dr. Leet is seismologist in charge of the Harvard University Seismograph Station at Harvard, Massachusetts. The first prototype had just been finished and tested in the spring of 1945, when a sudden call was issued by the Manhattan Project for some of the instruments to record ground motion at the test in New Mexico. A drastic production deadline was met by the instrument making firm, Laboratory Associates of Belmont, Massachusetts, and all the instruments were in place and operating properly at 5:30 in the morning of July 16, 1945, in the Jornada del Muerte Valley.

Permission has been given by the project for publishing a report on one of these records provided inspection by them shows no improper revelation of classified material. In the analysis preparatory to publication it has already appeared that there are two very important features from the standpoint of seismology. One is clear confirmation of the existence of a new elastic wave which Dr. Leet reported in 1938 and the other is the discovery of still another new and unpredicted wave type. There is no way of assessing the ultimate value of these discoveries at present, but they are of a basic character, as would be a new element to a chemist. Further study of the character of these waves may lead to important conclusions relative to quarry blasting complaints.

R.F.C. Selling 7,000 Tons of Surplus Cement

At Corpus Christi, Texas, the Reconstruction Finance Corporation recently offered to the highest bidder a shipload of 140,000 94-pound bags of cement. The shipment, consigned to the Navy, was turned over to the R.F.C. for sale. It was the first such shipment to arrive in Corpus Christi since several years ago, when Belgian cement was being imported.

A.I.M.E. Will Meet In Chicago Feb. 25-28 Plan Technical Program

The A. I. M. E. annual 1946 meeting will be held in the Palmer House Hotel in Chicago—the dates being Monday, February 25, to Thursday, February 28.

The meeting is to include a comprehensive technical program, arranged by the divisions and technical committees. The local sections will be represented. During the business sessions the new Board of Directors will be formally organized. Social events will include the Institute luncheon, a smoker, an informal dance, and the annual dinner on Wednesday night, at which Harvey S. Mudd, president in 1945, will be replaced by his successor.

War Made Drastic Cut in Supply of Non Metallics

Demands made by the war on our mineral resources and the recent tremendous expansion of production have diminished our commercial supplies of some minerals nearly to the vanishing point, according to the U. S. Department of the Interior. Among items of interest to those engaged in nonmetallic industries are the following statements from a recent release:

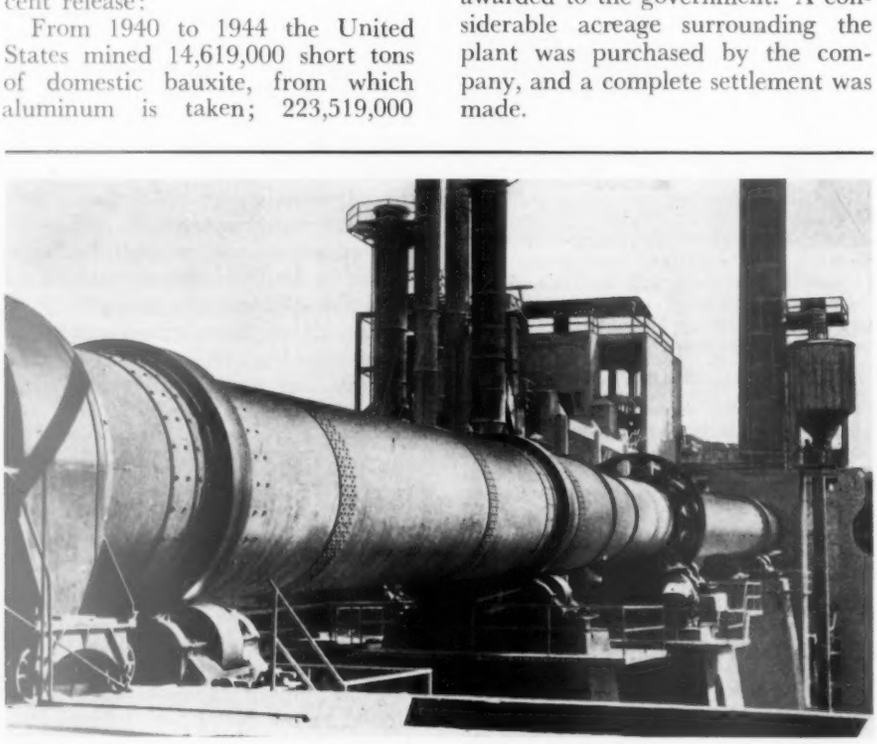
From 1940 to 1944 the United States mined 14,619,000 short tons of domestic bauxite, from which aluminum is taken; 223,519,000 pounds of molybdenum, used for making alloy steel; 1,750,000 short tons of fluorspar, also essential in steel making.

Approximately 15,562,000 long tons of sulphur, 68,000,000 short tons of salt; and 3,155,000 short tons of potassium went into the manufacture of war materials.

Although over 90 per cent. of phosphate rock and molybdenum, approximately 99 per cent. of all salt, and 60 per cent. of fluorspar and sulphur remained in 1944, less than 35 per cent. of our bauxite supplies were left. It is estimated that only a three-years' supply of asbestos and a nine-years' fluorspar reserve remain.

Lo! The Poor Indian Finally Gets a Break

An out-of-court settlement recently ended litigation in which the United States Government had sued the Northwest Magnesite Company for damages to the productivity of land held by the heirs of five Indian wards of the Government. It was charged that dust and gases from the plant at Chewelah, Washington, had seriously injured the fertility of the 620-acre tract. Damages amounting to $3,840 in crop rental loss and $11,625 in cash rental loss were awarded to the government. A considerable acreage surrounding the plant was purchased by the company, and a complete settlement was made.



Pictured is a Vulcan Iron Works kiln at the plant of the Compania Peruano de Cemento Portland, near Lima, Peru. A second unit was recently shipped to the same concern. Two of the kilns in use at this plant are 200 feet long, and 8 feet and 9 feet, 6 inches in diameter. The newest Vulcan is 8 feet by 112 feet, with two tires. Compania Peruano de Cemento Portland also has three Vulcan rotary coolers and three large Vulcan grinding mills.

Kaiser Plans Cement Storage and Packing Plant at Seattle

The Kaiser interests of Oakland, California, have begun receiving bids for the construction of a cement storage and packing plant on a 12-acre site in Seattle. The plant, to be operated by the Permanente Cement Company, will have eight 10,000-cubic-foot cement storage silos, a three-story packhouse and a pier.

Acute Housing Shortage Expected to Grow Worse

According to a statement made in New York recently by John B. Blandford, Jr., National Housing Administrator, approximately 1,500,000 urban American families will be living "doubled up" by December as a result of the acute housing shortage. Mr. Blandford added that the return of more servicemen will double that number by the end of 1946. In urging a combined government-and-industry attack on the housing problem, Mr. Blandford declared that only such cooperation could bridge the gap between the spending power of the private citizen and the current high cost of materials and construction.

New Owners Build Agstone Unit at Illinois Plant

The American Silica Sand Company of Ottawa, Illinois, has announced its purchase of the Utica Hydralic Cement Company, producers of natural and dolomite cements, at Utica, Illinois. According to C. J. Niesen, president, the American Silica Sand Company is erecting at Utica an agstone unit expected to produce 1,200-1,500 tons of material per day. Mr. Niesen also stated that the company plans to resume the production of natural cements next spring. Modernization of the Utica cement plant is already under way.

Post-war expansion plans of the Riverside Cement Company, Riverside, California, include increasing its payroll by at least 100 employees. Howard R. Starke, general superintendent of the 35-year-old firm, stated that both the Crestmore and the Oro Grande plants would need additional workers.

A.S.A. Revises Standards Covering Gypsum Concrete

The American Standards Association has just completed revision of an important standard in the building field, covering design, construction and use of reinforced gypsum concrete, a building material widely used in floors and roofs.

This new standard, *American Building Code Requirements for Reinforced Gypsum Concrete*, reaffirms many of the detailed definitions of the one approved in 1941, but adds to it the results of four more years of study and experience with reinforced gypsum as building material.

The standard is divided into five main sections, covering Materials, Strength of Gypsum Concrete, Allowable Stresses, Design and Inspection.

This revision was developed by a representative committee of organizations and individuals concerned with the design, construction and use of reinforced gypsum concrete floors and roofs. The bulletin (A59 1-1945) is available from the American Standards Association, 70 East 45th Street, New York 17, at 25 cents per copy.

New Gypsum Plant in Arizona Now Operating

The completion of the new plant recently erected by the Arizona Gypsum Corporation was announced by Earl Stark, plant manager, at Phoenix. The plant, which has a capacity of 10 tons per hour, draws its supplies from its own mine at Winkelman. It is said to be the first of its kind in Arizona.

Curtailment of fluorspar production has become necessary due to the cancellation of orders by a number of hydrofluoric-acid plants and the reduction of orders in other industries. This has necessitated the return to a 40-hour week by some of the major producing companies.

Postage Stamp Proposed For Mineral Industries

An editorial in a recent issue of *Mineral Industries*, published by the Pennsylvania State College School of Mineral Industries, called attention to the highly diversified types of events commemorated by special issues of United States postage stamps. The argument was advanced that a series on the mineral industries would be appropriate, since minerals furnish 60 to 70 per cent. of the primary wealth in the United States. It was suggested that, in addition to historical events such as anniversaries of important happenings, the principal mining states should be featured, as well as vital metals, mineral fuels and nonmetallic industrial minerals.

We second the suggestion of *Mineral Industries* that interested members of the industry approach their senators and representatives with plans for stamps honoring these important fields.

Sullivan Lime Co. Plant at Rogue River Begins Installation of New Equipment

another ON THE SPOT report

THE agricultural-limestone plant of the Sullivan Lime Company at Rogue River, Oregon, which went into operation in September, 1944, has recently been sold to T. T. Leonard of Silverton, Oregon, and is continuing in operation under the active management of Mr. Leonard. He now has three Oregon plants devoted to the production of agricultural stone, the others, operated under the name of the Limestone Products Company, being located at Dallas, Oregon and at Marquam, Oregon.

A number of improvements are being currently planned for the Rogue River operation, including the installation of a dust-collecting system. The quarry serving this plant is located several miles from the grinding plant, and the stone is brought in by dump trucks. The trucks climb a ramp and discharge into a hopper which feeds the Universal primary jaw-crusher. The crushed stone is then elevated to a bin which feeds a newly-installed grinding unit, a Day No. 40 swing-hammer pulverizer.

The ground product, screened over a 10-mesh single-deck vibrator with the oversize returning to the pulverizer, is stored in overhead bins which have a capacity of 300 tons of material. It is withdrawn from the bins through spouts which can load the bulk material into cars or trucks or fill Bemis paper bags that are weighed on Fairbanks platform scales. About half the output is packed in paper, 100 pounds to a bag, and approximately 90 per cent. of the entire output is shipped by railroad.

The present capacity of the plant is about 10 tons of agricultural stone per hour. Equipment is powered with individual electric motors.

General view of the Sullivan Lime Co., showing truck ramp.

The swinghammer mill, part of a new grinding unit.

Rock from the quarry is fed into this primary crusher.

WASHINGTON NEWS LETTER

another P and Q exclusive

THESE are the main features of business developments since the end of the war.

1. Sharp declines have occurred in total production, employment, and income largely as a result of substantial reductions in war output; there have been some increases in construction activity and production of consumer durable goods, but not enough to offset other declines.

2. Gross national production has fallen rapidly to an annual rate of about $160 billion, as against the peak of $206 billion in the first half of this year.

3. Manufacturing employment is about 4.5 million below the level of the early part of this year, and the net size of the armed forces has decreased by about 3.5 million. No reliable measures of unemployment are available at this time in view of the extensive job shifts and withdrawals from the labor force; even official Census estimates are based upon a sample of less than one-tenth of one per cent. and an extremely restricted definition of unemployment. The number of unemployed ready, willing, and able to work, is probably in the neighborhood of 4 million and still increasing.

4. Consumer incomes have been sustained in part by unemployment compensation, separation allowances and mustering-out pay, and contract-termination settlements, but primarily because of reduced manufacturing pay rolls, the total national income has declined more than 15 per cent. Even in the face of this drop in current incomes, consumer expenditures have been maintained or slightly increased, with consumers drawing down savings in their willingness to spend. This is striking evidence of the strong inflationary pressures which continue to persist throughout the economy despite the deflation which has already occurred.

5. The full impact of demobilization has not yet been felt. War-activity outlays are down to an annual rate of $60 billion from the rate of about $87 billion in the first half of this year, but during the year ahead the scheduled drop is to a $15 billion rate. Most of this further decline will take place by next spring. Similarly, the major releases from the armed forces are still to come, at approximately the current rate of 1.0 to 1.5 million men per month.

6. Declining war outlays during the next few months will be offset in part by such factors as expanded construction activity, rising output of durable goods, and lower corporate and individual tax rates, but the downward pressures will continue to dominate the economy until a low point is reached some time around the middle of next year. This will represent the economic crisis for the reconversion period. By this time, the force of the first post-war deflationary pressures should be more or less spent, civilian goods should be on the market in considerable quantities, and the accumulated demands of producers and consumers, backed by voluminous liquid savings at the disposal of both groups, should be strong enough to reverse the trend and bring about a moderate recovery in the second half of the year.

Much has been written recently about how well reconversion is going, and it is true that unemployment is somewhat lighter than expected, while consumer spending has held up remarkably well. Nevertheless, in view of the definite deflationary prospects for at least the next six months, there is little reason for wild rejoicing; far from being out of the woods, the inescapable truth is that we have hardly entered them.

Among the chief question marks affecting the course of reconversion in 1946, and the pattern of the economy for several years thereafter, are the yet-undetermined wage-price policy for the nation, and, closely associated with this, the extent and effect of labor-management disputes. Industrial peace is not possible in an unstable economy, while industrial strife is itself an unstabilizing influence particularly during the transition period when extensive economic readjustments are in prorgess.

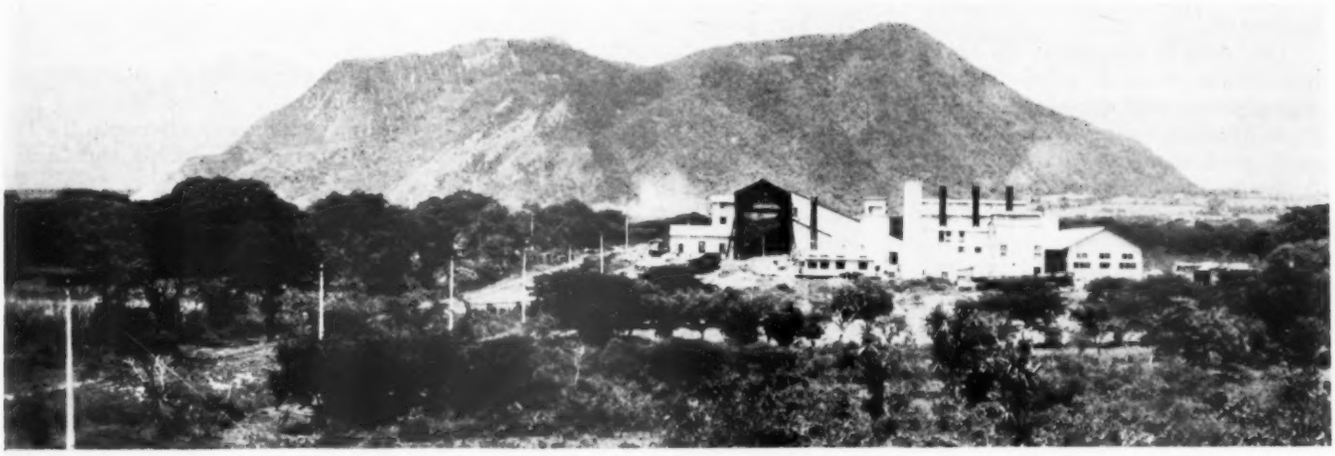
One of the main difficulties in this sphere has been the widespread public confusion over the economic desirability of wage increases, and the ability of industry to absorb increased costs. A candid, objective statement on this subject would serve to clear some of the tension as well as enlighten the public, but so far, despite the broad generalities of the President's talk, the government has failed to discharge this responsibility. Of course, an intensive, objective analysis of the economic situation has been made by government agencies, as was disclosed through a leak to the press during the past month of a special report on the wages-profits position of industry prepared by the O.W.M.R. economists. This report was presented to the O.W.M.R. Advisory Board which consists of representatives of industry, agriculture, and labor. The major conclusion supported by a detailed analysis was that even if basic hourly wage rates were increased by 24 per cent. in 1946, profits after taxes of corporations as a whole, and manufacturing corporations in particular, would be about as high as in 1942 and very substantially above any peace-time year.

Not all the increase in basic wage rates would represent higher labor costs per hour. Reduction of overtime premium pay, and declines in wage costs resulting from "a more frugal administration of wage schedules," (*i.e.*, from down-grading, elimination of shift premiums, job reclassification, and transfers from the higher-wage munitions industries to the lower-wage peace-time occupations) would permit wage increases of at least 14 per cent. without affecting average hourly labor costs. The additional 10 per cent. probably would increase such costs, but the report points out that the windfall to corporations resulting from the repeal of the excess profits tax would just about offset the further 10-per cent. wage rise. Finally, if wage-rate increases were held to only the 14 per cent., the O.W.M.R. report forecasts that corporation profits after taxes in 1946 —the first full peace-time year— would exceed even the war-time peaks of 1943 and 1944.

Brazil's cement industry has reported a sensational increase, the result of the wartime construction boom. A monthly production of 1,703,880 bags has been reached, each weighing 60 kilograms. Most of South America's 24 cement plants are located in Brazil and Argentina.

American railroads have agreed to extend until January 1, 1946, the suspension of 1942 freight-rate increases. The increases, averaging 4.7 per cent., were in effect from March 18, 1942, to May 15, 1943, at which time they were suspended, chiefly at government insistence that higher rates would add to the danger of wartime inflation.

Many Special Shortage and Shipping Problems Overcome in Constructing Mexico's Newest Cement Plant



General view of the factory of Cementos Veracruz, S. A., near Orizaba, Veracruz, Mexico.

another P&Q exclusive

WITH the starting of operations in late August, the new cement plant of Cementos Veracruz, S.A., located near Orizaba in the state of Veracruz, became the twelfth producer of cement in the Republic of Mexico. The state of Veracruz, one of the richest in Mexico, has long been one of the largest consumers of cement, and the new plant is the first to be built within its borders. Previously all cement of Mexican manufacture consumed in the state was shipped in by railway and highway from the older established cement plants in the states of Puebla, Hidalgo and Mexico, and shipping distances were as great as 275 miles.

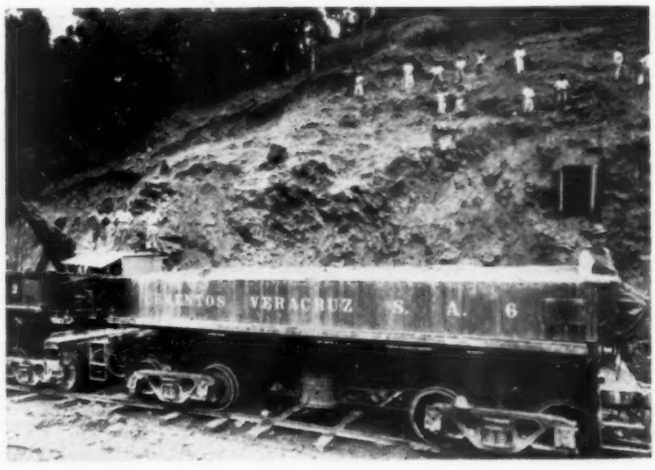
Below: Shovel working in auxiliary limestone quarry a short distance from the crushing department.
Right: View in the shale quarry, where shale is loaded by gasoline-driven shovel into 20-cu.-ft. quarry cars.

On occasions cement was imported through the Port of Veracruz by water shipment originating at New Orleans.

As a consequence, and due to long railway and waterway transportation the cost of cement to the consumer was usually 30 to 40 per cent. higher than prevailing in those markets adjacent to or within short highway or railway haul from factories located in various parts of the country.

During the Spring of 1943 an extensive survey of available raw materials in the state was made by engineers and chemists of Cementos Atoyac, S. A., whose plant is located at Puebla, in the adjoining state of Puebla. The Atoyac company for a great many years had shipped upwards of 40 per cent. of its production into the state of Veracruz, but in recent years had to reduce its volume of shipments in order to take care of its more immediate markets.

In the selection of the site for the new cement factory a great many factors had to be given special consideration. Throughout the state of Veracruz as well as in other sections of Mexico a shortage of power has existed for a number of years and the local power companies, a great number of which have hydroelectric installations, had been imposing restrictions upon their old customers during the March-June periods of the dry season, in some cases to the extent of 30 per cent. To new customers the power companies could only guarantee to supply 100 per cent. power requirements during the rainy season, July to February. Whereas certain seasonal industries might be able to work under such conditions, the year-around operation of a cement factory would be jeopardized by such conditions and therefore it was evident at the start

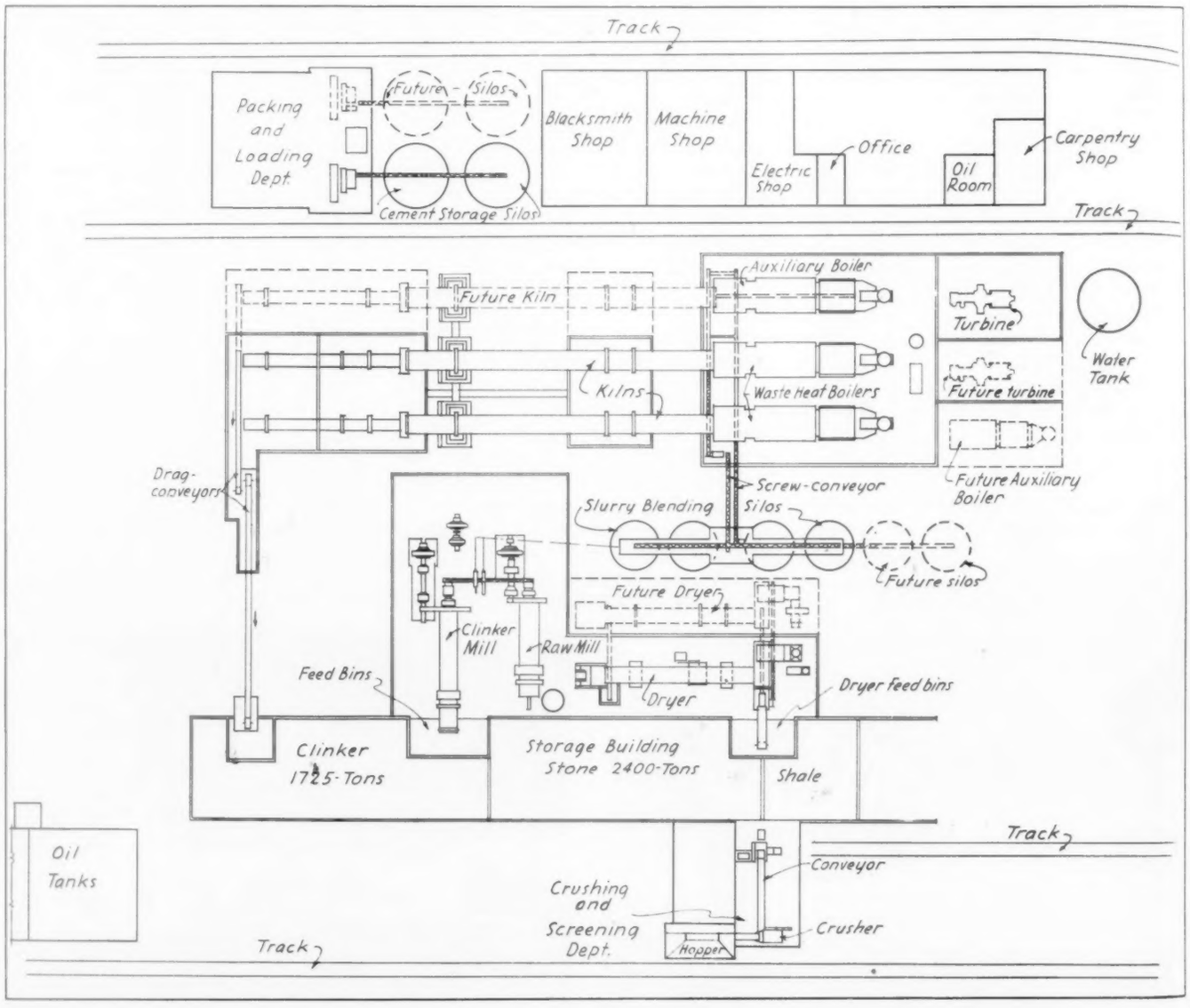


that the new factory would have to have its own source of power. Since water rights on the various rivers are somewhat hard to obtain, and as war-time conditions precluded any possibility of obtaining new power-plant equipment, it was evident that steps must first be taken to solve the power question before any general design or plans for the plant could be started.

The Atoyac company, in having had over a period of years most cordial relations with the Marquette Cement Manufacturing Company, Chicago, and recalling that the latter company during the early years of the war had completely modernized its plant at Des Moines, Iowa, leaving its old plant practically complete with kilns, coolers, waste-heat boiler plant and allied machinery and equipment, approached the Marquette company with the view of obtaining a part of this equipment for the proposed Orizaba plant. A number of conferences between officials of the Atoyac and Marquette companies resulted in the development that the Marquette company was not only interested in supplying the majority of the machinery and equipment for the Orizaba plant, but was also interested in becoming associated as a partner in the new Veracruz company. Shortly thereafter officials of the Marquette company, headed by its president, W. A. Wecker, paid a visit to Mexico and the business details were worked out. Following this a corps of Marquette engineers arrived in Orizaba and with the local organization of Cementos Atoyac, S.A., made a complete study of the project at first hand. A decision was reached to build the new plant near the city of Orizaba, which is located in the central part of the state of Veracruz and is its second largest city.

Selection of Site Selection of the site, apart from the question of raw materials, involved consideration as concerns a sufficient and steady source and supply of water. Other considerations included site of plant as concerns distance from raw material deposits; railway and highway facilities. A combination of all the desirable conditions was found near the village of Escamela, in the Municipality of Ixtaczoquitlán, located some five miles south of the City of Orizaba on the Mexico City-Port of Veracruz trunk highway some 15 miles north of the city of Cordoba. An existing railway connected the plant site with the main line of the Mexican Railway which operates between the Port of Veracruz and Puebla and Mexico City.

The location selected is at an elevation of about 4,000 feet above sea level and in the heart of the farming and fruit-growing section of the Orizaba valley. About 250 acres of land was acquired which included large limestone and shale deposits. From the plant site the main limestone deposit is about four miles distant and the shale deposit a mile distant in the opposite direction. An



Plan of the plant of Cementos Veracruz, showing future units in dotted outline.

existing railway was also acquired which connects with both limestone and shale quarries as well as with the Mexican Railway about 3 miles from the plant site. The location of the plant is between the railway and the National highway.

Upon the plant site is a large spring and a small stream traverses the plant site properties. The volume of water in the driest months of the year is three or four times as great as the total plant requirements. In purchasing the various properties the Veracruz company acquired a great number of producing banana plants, something over a thousand orange trees, and thousands of coffee trees as well as some lands upon which sugar cane is planted. With the snow-capped peak of Mount Orizaba towering into the skies to a height above 18,000 feet above sea level, in the background, the plant site is a most attractive one from the scenic viewpoint. On one edge of the plant site properties, and located in canyons 100 feet down, are the Escamela and Blanco Rivers which originate farther up in the Orizaba valley from springs seeping out of the limestone formations. These rivers are the source of most of the hydroelectric power produced in that section of the state.

Quarries As concerns raw materials, the main limestone quarry is located about 4 miles from the plant on the company's railroad. Limestone is of massive formation, blue in color, and averages in excess of 95 per cent. calcium carbonate. The present quarry has been operated over a period of a great many years supplying limestone for lime manufacture, ballast for railway and road beds, stone for buildings, and aggregate for concrete, for use in the Orizaba region.

The present quarry face is about 300 feet high although the hill develops a height of about 600 feet farther in and extends into a solid mountain of limestone that reaches a height in excess of 2,000 feet. As a result, thousands of years of supply are in sight.

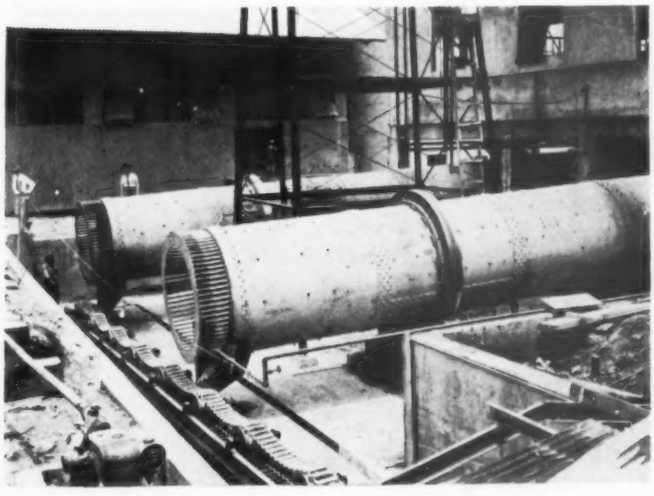
Drill holes are set down with a 6-inch Type 14 Sanderson Cyclone gasoline-driven well drill, and secondary drilling of stone too large for handling with the shovel is accomplished with jackhammers. All explosives used are of Mexican manufacture and charges are set off with a du Pont No. 50 electric blasting machine. Air for the jackhammers is supplied by a portable gasoline air powered compressor having a capacity of 160 c.f.m. at 100 lbs. pressure. A 1¾-cu. yd. No. 37 Marion electric shovel loads stone direct from quarry floor into Kilbourne & Jacobs all steel 20-cu. yd. air-operated lift-door type standard-gage cars, of which the company has 17 in service. Haulage between quarry and plant is effected with a 30-hp. 55-ton diesel-electric locomotive, and quarry work is accomplished during one 8-hour shift daily excepting Sundays and holidays.

In connection with limestone supply it might be stated that at the plant site and in its vicinity large beds of a soft, yellow, granular limestone is found in thicknesses ranging up to 70 feet, and in starting off plant operations a deposit of this limestone located only 100 yards from the crusher was opened up with the Marion shovel. Dempster Dumpsters equipped with 3-cu. yd. buckets are used to haul the limestone the short distance to the crusher hopper. Due to the softness of the stone very little crushing is necessary.

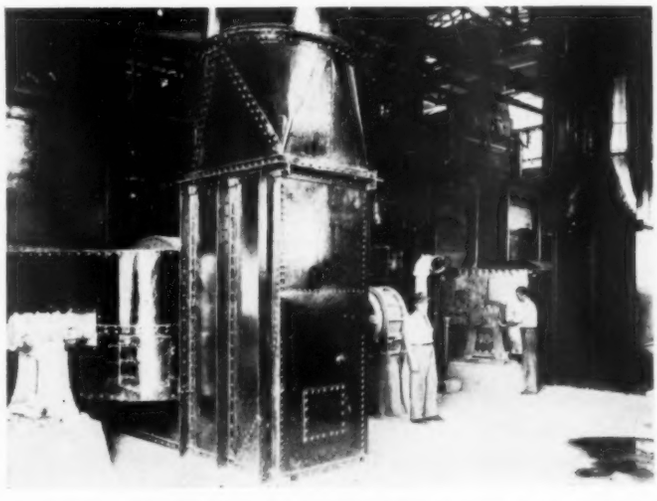
Apart from the 55-ton locomotive a small 10-ton Plymouth gas-diesel utility locomotive is used for general switching of fuel oil cars, cement and other cars around the plant.

The shale quarry is situated about a mile from the plant on the company's railway. Drilling is also accomplished with the Sanderson Cyclone drill and shale is loaded from the quarry floor by a ⅜-cu. yd. Orton gasoline-driven shovel into the 20-cu. yd. quarry cars.

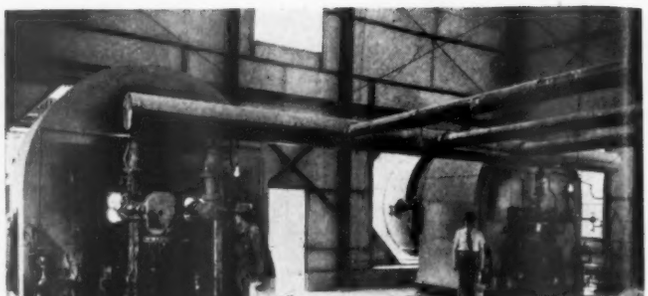
Crushing and Storage Limestone from quarry cars and Dumpster buckets is discharged into the crusher hopper from which it is fed by means of a 36-inch by 24-ft. Stephens-Adamson pan conveyor to a 36 by 24-inch Allis-Chalmers No. 3241 jaw crusher which reduces the stone to 4 inches and down, discharging it on to a 30-in. by 40-ft. Stephens-Adamson pan conveyor. This feeds the Type SXT-5-42 Pennsylvania hammermill which further reduces the stone to ¾-inch and down. Both jaw crusher and hammermill are driven by 150-hp. G-E motors. The company has a contract to supply the Mexican Railway with a large yearly tonnage of ballast and aggregate for concrete and when this is being done an elevator from the hammermill discharges on a Tyler 5-by 10-ft. 3-deck vibrating screen. When stone is being crushed for cement-making purposes the material from the hammermill by-passes this screen and discharges into the crane storage. Inside the crane storage, which is a structural steel building 40 feet wide by 29 feet long, and roofed over, a 7½ ton Milwaukee crane having a P & H trolley and equipped with a 1½-cu. yd. Hayward clamshell bucket transfers the crushed limestone to storage piles or directly across the crane runway



Two 6- by 60-foot coolers discharge clinker to the drag-chain conveyor.



Waste-heat boilers use the 1,600-degree F. waste kiln gases.



Above: Diesel-electric locomotive moving cars in the Cementos Veracruz plant yard. Right: Two kiln-firing hoods, each with two low-pressure oil burners.

to the limestone bin ahead of the drier.

The shale also follows the same crushing procedure and, upon being discharged into the crane storage, is transferred by the crane into storage piles, or across the crane storage to the shale bin which is ahead of the drier.

Certain days are set aside for the crushing of ballast and aggregate and on such days a string of hopper cars is spotted on a spur located outside the crane storage, and the crane deposits the ballast and aggregate into small outside bins which load directly into the hopper cars.

Gypsum is quarried by the company at Juile, Veracruz, and is hauled a distance of 5 miles in Dempster units equipped with 3-cu. yd. buckets for loading on hopper-type railway cars. It is then transported over the Isthmus branch of the National Railways of Mexico to Cordoba where cars are transferred to the Mexican Railway and delivered to the plant. The gypsum follows identical crushing procedure as that of the limestone and shale and is picked up by the crane and deposited on piles inside the storage or in the gypsum bin located ahead of the finish-grinding mill. In cases of necessity gypsum is also obtained from the quarries located at Matamoras in the state of Puebla and transported in narrow-gage cars over the Mexicana Del Sur railway to the city of Puebla where it is transferred to the standard-gage cars of the Mexican Railway for delivery to the plant at Orizaba.

The crane storage has a capacity of 2,400 tons of crushed limestone, 800 tons of crushed shale, 1,000 tons of sized aggregate and ballast, 200 tons of crushed gypsum and 1,750 tons of clinker.

Drying and Raw Grinding The crane elevates the crushed limestone and shale to two steel bins located inside the crane storage, each having a capacity of 100 tons. The limestone is fed from the bin by means of a reciprocating feeder and the shale with a sling feeder on to a 24-in. belt conveyor to an elevator which discharges the proportioned raw mixture into a 6 by 60-ft. oil-fired drier. For atomization of the fuel oil a Sturtevant centrifugal compressor, having a capacity of 850 c.f.m. free air at 2½ lbs. pressure, is used and burning is accomplished with a No. 9-A Staples & Pfeiffer low-pressure oil burner. At one side of the drier dust chamber is a Size 48-6 Multiclone of Western Precipitation manufacture. Space has been provided for the installation of a second drier.

The dried raw mixture is elevated from the discharge end of the drier to an 80-ton feed bin which is equipped with an apron feeder for feeding the 8 by 36-ft. Traylor compartment mill. This mill has a graded ball load of 110,000 lbs. in its several compartments and preliminary and fine reduction of the ¾-in. down raw mixture is carried out to a fineness of 88 per cent. passing the 200-mesh screen. The mill is driven by a 900-hp. Crocker-Wheeler motor, which is supplied through a 1500-kw. G.E. motor generator set.

Storage and Blending The finely-ground raw mixture is conveyed 15 feet from the discharge end of the mill to a small hopper serving a 7-in. Type H2 Fuller-Kinyon pump equipped with a Type C-100 Fuller rotary air compressor.

The ground raw mixture is pumped to four concrete silos which have a capacity of about 300 tons each. The raw silos are equipped with drum feeders for blending and these discharge into a common screw conveyor and elevator which distributes the material to 40-ton-capacity kiln-feed bins situated over the feed ends of the two kilns.

Burning The two kilns are 8 by 121 feet and are driven by variable-speed motors. The burning zone in the kilns is lined with A.P. Green "Kruzite" 70 per cent. alumina brick. The calcining zone of the kilns is lined with high-silica brick, and the preheating zone in the kilns are lined with a red brick, both of local manufacture. Kilns are equipped with Huron air seals.

Fuel Oil Fuel oil of 16.5 Baumé, 18,600 B.t.u., is received in tank cars over the Mexican Railway from the storage of Petroleos Mexicanos in the Port of Veracruz. These storage tanks are supplied from tankers operating on the Gulf of Mexico from the oil fields and refineries at Minatitlán in southern Veracruz. The fuel oil discharges by gravity from the tank cars into a concrete underground oil storage tank having a capacity of 1,500,000 liters. Oil is pumped from this storage to an auxiliary storage tank of 8,000-gal. capacity located off the firing floor of the kilns over the coolers. A second auxiliary oil tank of like capacity is located above the firing floor of the auxiliary boiler for serving the latter. The oil, upon being preheated to the desired temperature for proper atomization, is pumped direct to kiln burners and the overflow returns to the auxiliary tank. Each kiln is equipped with two Staples & Pfeiffer No. 9-B low-pressure oil burners and atomization is effected at a pressure of 2½ lbs. Air for atomization is furnished to each kiln by a Sturtevant centrifugal compressor. A third compressor is installed as a spare.

Waste-Heat Boilers Both kilns operate in connection with waste-heat boilers. There are three 805-hp., 8,050-sq. ft., heating surface, 4-pass Edgemoor water-tube boilers, two of which are installed behind the kilns to utilize the temperature of the waste kiln gases, and the third is provisionally installed as an auxiliary boiler which

is oil fired and this boiler floats on the line at all times. The auxiliary boiler is equipped with Todd oil-burning equipment which includes 300-lb. pressure mechanical atomizing burners with Bailey controls. The auxiliary boiler is installed identical to the two waste-heat boilers to permit the possible future installation of a third kiln for use as a waste-heat boiler. When this installation is made power generation will be increased by 50 per cent.

All the boilers are equipped with Foster superheaters and Green fuel economizers of 2,500-sq. ft. heating surface each, followed by induced draft fans driven by 150-hp. variable-speed motors. The fans discharge through three steel stacks 5 feet in diameter by 70 feet high.

The temperature of the gases entering the waste-heat boilers from the kilns is around 1,600 deg. F. and the temperature of the gases entering the stacks is in the neighborhood of 350 deg. F.

About 80 per cent. of the total power required for the operation of the cement plant including the power house auxiliaries is obtained from the waste kiln gases. The balance of power is generated in the auxiliary boiler. The Bailey control on the auxiliary boiler maintains a constant steam pressure on such occasions as kilns are down when punching rings and during periods of emergency repair to kilns, etc., and the capacity of the auxiliary boiler is more than that necessary to take care of the steam requirements of the turbo-generator with full load of the cement plant.

A Bailey flow meter and temperature recorder is installed to measure the input of steam to the turbo-generator. Individual steam indicating flow meters are installed on each of the boilers to measure their output. The boilers are also equipped with three Swartout boiler feed regulators. All feed water for the boilers is evaporated in a Griscom Russell horizontal coil evaporator which is supplied with bled steam from the second stage of the main turbine at approximately 50 lbs. pressure. A feed water heater with deaerator is also installed. Two Allis-Chalmers boiler feed pumps of 125 g.p.m. capacity at 250 lbs. pressure, the one electric and the other steam driven, are also installed. A large blow down tank is installed outside of the boiler house building.

Clinker Cooling, Storage and Grinding Clinker is discharged from the kilns into 6 by 60-foot coolers which in turn discharge it into an inclined drag-chain conveyor which deposits the clinker into a pit located inside the crane storage. Here the overhead crane distributes the clinker to piles inside the storage or direct to the 100-ton-capacity steel bin located inside the crane storage over the feed end of the Traylor 8-by 7-by 47-foot compartment mill for cement grinding. Crushed gypsum from storage is elevated to a second bin of like capacity. The clinker is fed by means of a sling feeder and the gypsum by means of a reciprocating feeder from bins to a pipe feeding the compartment mill. This mill is driven by a 900-hp. motor which, as in the case of the raw compartment mill, is served by the 1500-kw. motor generator set.

The cement mill also has a graded ball load of 110,000 lbs. in its four compartments.

The cement-producing capacity of the present plant is 200 metric tons per day and it is of interest to note that the raw mill operates only about 9 hours daily and the cement mill about 11 hours daily in arriving at this production, thus only one mill operates at a time. In the event of the installation of a third kiln no additional mill installation is anticipated.

The finished "Orizaba" brand of Portland cement is ground to a fineness of about 92 per cent. passing through the 200-mesh screen and discharges into a short screw conveyor which in turn delivers the cement to a small hopper over the 7-in. Fuller-Kinyon pump.

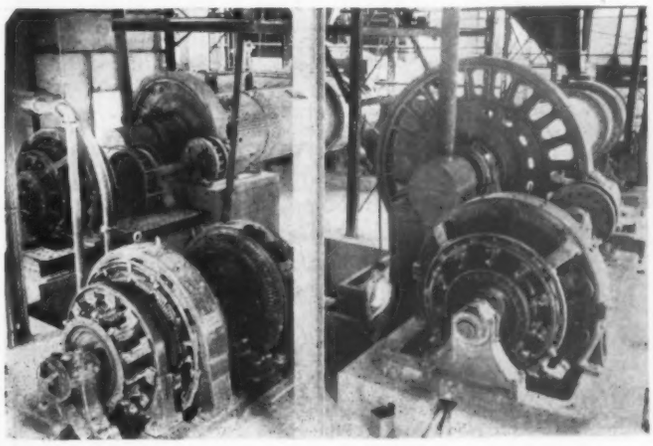
As only one mill operates at a time a common Fuller-Kinyon handles both the raw material and the cement. Provision has been made for the installation of a second pump should productive capacity of plant be increased later on, necessitating more or less continuous operation of both raw and finish compartment mills.

Cement Storage and Packing The cement is pumped to two concrete cement-storage silos having a capacity of about 750 mertic tons each. Provision has been made for the installation of two additional silos should conditions warrant.

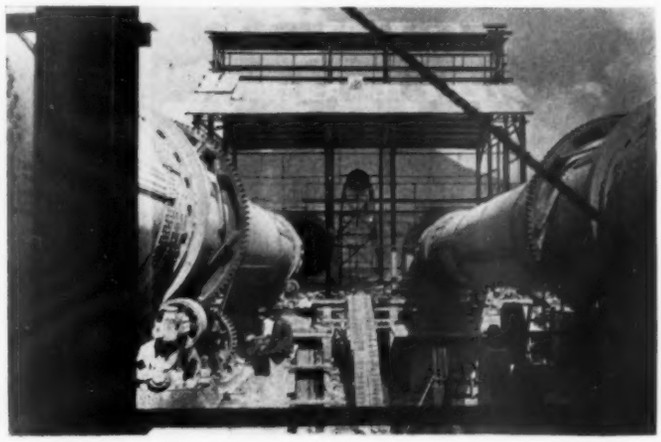
Cement is reclaimed from the silos by drum feeders into a common screw conveyor to the elevator which discharges the cement into a rotary screen for removal of all foreign materials and passes into a 10-ton enclosed steel bin over a St. Regis 3-tube packer. The cement is packed into 50-kilo 4-ply paper bags, of the sewn and glued type. Bagged cement is discharged on a 30-in. belt conveyor which transports sacks to trucks or railway cars.

The 3-tube packer is equipped with a No. 195 "Norblo" bag-type automatic dust arrester utilizing a No. 45 Norblo Type H.S. fan. Provision has been made for the installation of a second 3-tube packer when conditions warrant.

In connection with dust collection it should be noted that a similar in-



Raw and finish grinding mills with their 900-hp. motors.



View of the two 8- by 121-ft. kilns, with firing hoods in background.

stallation serves the raw-and finish-grinding compartment mills consisting of a No. 312-A Norblo dust arrester operated in connection with a No. 55 Norblo Type H.S. fan.

It is of interest to note that simultaneous with the starting of plant operations a contract for a large tonnage of cement for use in concreting the tunnel of the Valsequillo Dam, located about 20 miles from the city of Puebla, in the state of Puebla, was signed with the Federal Commission Nacional de Irrigacion whereby the Orizaba plant is to supply 100 tons of cement daily through December 1946, or half of the total plant production. At the start this cement will be shipped in paper bags, and as soon as receiving installations in Puebla are completed, cement will be shipped by rail in bulk.

Power Plant Power plant equipment consists of a G. E. 2,500-kw., .8 power factor, 3,125-k.v.a. alternating generator, direct condensing turbine, equipped with a 4,000-sq. ft. Elliott-Ehrhart surface condenser with two centrifugal condensate pumps and an Elliott twin air ejector with after-condenser. Also installed are two De Laval 12-in. centrifugal condenser-cooling-water circulator pumps. These pumps are connected in parallel and either pump handles the cement plant load when circulating 4,000 g.p.m. With both pumps in operation simultaneously 5,000 gallons of cooling water is available.

The waste-heat building and power plant are of structural steel, the former with steel sheeting roof, and the latter with a specially-designed concrete slab roof. In the power plant is installed a 15-ton Whiting hand-operated traveling crane.

A Marley Co. double induced-draft cooling tower of 2,500-k.w. capacity is in operation to insure efficient cooling of the circulating water during periods of highest wet bulb temperature. A small stream originating from a spring on the property is diverted through the cooling tower basin to keep down concentration due to evaporation as well as to aid in the cooling of the water returning from the power plant condenser.

Overhead crane, equipped with a 1½- cu. yd. clamshell bucket, handling the material to be stored in bins.

The cooling tower is designed for reducing the temperature of the cooling water from 100 deg. F. to 88 deg., a drop of 12 deg. when handling 5,000 gallons of water per minute. An additional 3 deg. of cooling is obtained by diverting the natural water supply through the cooling tower basin, the surplus being discharged over a weir at the opposite side of the basin.

In the power plant a modern draw-out type switchgear is installed and consists of 5 panels, one for the generator, one for the incoming line for interconnection with an outside source of standby power, and 3 feeder panels. As soon as wartime conditions permit 3 additional feeder panels will be purchased and installed. The switchboard is solenoid operated using 250-volt direct current on the closing and opening coils.

Electrical Data All of the motors in the cement and power plants over 50 hp. in capacity are wound for 2,300 volts, 3-phase, 60 cycles, and all motors below 50 hp. are 440 volt, 3-phase, 60 cycle.

Direct-current motors are used on the two compartment mills and on the two kilns. By using direct current on the two large compartment mills perfect speed control is obtained and at the same time unity power factor for the entire plant is maintained by means of field adjustment on the 1500-kw. synchronous motor generator set used in connection with the 900-hp. motors which drive each of the mills. The two variable-speed kiln motors are also direct current.

An automatic kiln feed control is had by means of a small generator connected to the extended shaft of each of the 30-hp. kiln motors by "V" belt drive and by small motors driven from the above generator installed on the kiln-feed conveyors. By varying the field on the small generators different ratios of speed are easily obtained between the kiln-feed motors and the large kiln motors.

All other motors used in the plant are of the standard wound rotor or squirrel cage induction type either connected to gear reducers or by "V" belt to their respective drives.

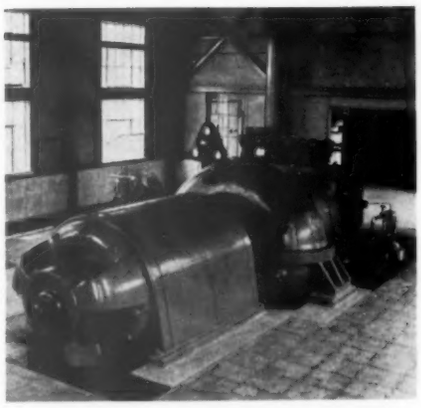
As has been mentioned previously the cement plant has a connection for standby power from an outside source, and this power was used during the period of plant construction. To receive the power the plant maintains a small outside substation in which is installed three monophase, 200-kv.a. Pittsburgh 2300/480/240-volt transformers.

The lighting system in the plant is maintained through three 25-kv.a. 1-phase General Electric 2300/115-volt transformers. Other transformers in service or used as standby are three 100-kv.a. General Electric single-phase, 60-cycle, outdoor type, and one 300-kv.a. Allis-Chalmers 6600/6300/6000-volt primary -2300-volt secondary, 3-phase 60-cycle transformer.

Main Escamela limestone quarry, formerly used by Cementos Veracruz.

Plant Design From the planning stage through placing the plant into operation the Marquette Cement Manufacturing Company from their head offices in Chicago were purchasing agents for Cementos Veracruz, S.A., and arranged for the shipment of about 100 railway cars of machinery from a great number of points in the United States. Some of these shipments came into Mexico through the entry port of Laredo, Texas, but at times when cars were congested at this point, shipments were effected through the Eagle Pass, Texas port of entry. During the period that these shipments were made a number of embargoes were placed on cars going to Mexico by the American Association of Railways at Washington at the request of the National Railways of Mexico, since this latter railway was at times unable to handle all the cars intended for various points in Mexico originating in the United States. As a result some cars reached Orizaba in a total three-week lapse of time from date of shipping in the States, while others required as long as four months between date of shipment and arrival at Orizaba. In view of small tunnels that exist on the Mexican Railway line between Mexico City and Orizaba specific methods of loading some of the larger pieces of machinery were necessary and in connection with this plans had to be drawn showing height, width and lengths of larger pieces of machinery, as well as weights, on cars, taking into consideration railway bridges and tunnels, and in each case such as when kilns, boilers, the turbo-generator and other large pieces of machinery were shipped, these plans were submitted to the engineers of the National Railways of Mexico and the Mexican Railway for approval before shipments were accepted by the many American railroads at points of origin. It was fortunate that of the great many cars of machinery involved, very little damage, breakage or shortage occurred enroute which recommends the manner in which railways operated at the peak of wartime conditions both in Mexico and in the United States.

In connection with the planning and design of the Orizaba plant the Marquette engineering organization drew up the majority of the plans with the help of the engineering organization of Cementos Atoyac, S.A. at Puebla, Mexico, and each department in the plant was designed to operate with maximum efficiency taking into consideration the difference in conditions concerning plant operations that prevails in Mexico as compared with that of general practice in cement plants operating in the United States. In this consideration had to be given elevation above sea level at plant site, the peculiar climatic conditions at Orizaba where 8 months of the year are dry and 4 months of torrential rains occur almost daily. Labor conditions also came in for prime consideration. Relative humidity ranges between 49 and 87 per cent.



The 2,500-kw. turbo-generator in the power house.

The Marquette organization, headed by its president, W. A. Wecker, designated charge of all purchasing and shipping as well as the matter of priorities and the securance of export licenses to L. W. Saxby, assistant to the president; based upon past operation of kilns, coolers, dryers, waste heat boiler plant, compartment mills, feeders, elevators, conveyors, etc., that was to be supplied by Marquette for Orizaba. Frank Moyle, general superintendent, and Frank Baumgardner, general power plant superintendent, contributed largely to final planning and design of plant, and each of the men came to Mexico on a number of occasions during the designing and construction stages as well as to assist in placing the plant in final operation.

The Atoyac organization, headed by its president, Jules Lacaud, designated building of plant to Alton J. Blank, general manager, and V. E. Metcalfe as manager of the Orizaba plant was in charge of its construction assisted by C. E. Phillips, superintendent of construction. Key engineers, draftsmen, mechanics, erectors, carpenters, electricians and other personnel was furnished by the Atoyac company during the period of construction.

The Marquette company in return for machinery supplied and engineering services rendered received the total issue of preferred stock in Cementos Veracruz, S.A., which amounts to 1,700,000.00 pesos Mexican currency.

Mr. Wecker is on the board of directors of the Veracruz company. Mr. Lacaud heads Cementos Veracruz, S.A., as president. Other officials include Alton J. Blank, general manager, and V. E. Metcalfe, asst. general manager.

Total cost of plant is slightly in excess of 8,500,000.00 pesos Mexican currency.

After planning of plant was completed, due to wartime conditions it was necessary to secure permission from the Mexican and American Governments to build the plant. Since an acute shortage of cement was had in Mexico at the time no difficulty was had in securing permission of the Mexican-American Committee of Coordination and the American Embassy in Mexico convinced the Foreign Economic Administration in Washington of the necessity for the plant. With this approval in hand the Mexican Treasury Department waived duties on all machinery and equipment to be imported into Mexico, used and new, for the Orizaba plant. At the same time the Government of the state of Veracruz granted exemption of state taxes on a sliding scale over a period of five years, allowing 99 per cent. exemption the first year, 75 per cent. the second year, 50 per cent. the third year, 25 per cent. the fourth year and 15 per cent. the fifth year.

Engineers of Marquette designed all of the plant and power plant buildings, supplied the steel, and did the fabrication. Buildings of structural steel include the crane storage, the kiln drive and firing floor buildings, crusher, drier and mill buildings and the waste-heat boiler and power plant buildings.

The building housing the warehouse, machine, electrical and carpenter shops, and packhouse are of structural steel, local design, cement-asbestos roofing. General offices, timekeeping, watchmen and laboratory buildings are of reinforced concrete, brick plastered walls and tile roofs. In the building of the plant over 7,500 cubic meters of concrete was poured.

Construction materials were in the main obtained locally. All of the cement was supplied by the parent company, Cementos Atoyac, S.A. from its plant at Puebla as was all of the masonry cement for bricklayin, rough and smooth wall plastering and stuccoing. Fire clay, brick,

(*Continued on page 66*)

A. I. M. E. Industrial Minerals Division Meets in Philadelphia

By WALTER E. TRAUFFER

another ON THE SPOT report

THE Annual Fall Meeting of the Industrial Minerals Division of the A. I. M. E. was held October 25, 1945, in cooperation with the Philadelphia Section at the Franklin Institute of Pennsylvania in Philadelphia. An interesting program resulted from the efforts of the Papers and Program Committee, of which J. L. Gillson is chairman and the meetings were presided over by H. A. Heiligman, R. M. Foose, Oliver Bowles and S. M. Shallcross.

In the first paper John Clark, Foote Mineral Co., discussed "Lepidolite, Its Occurrences and Uses." Until now used largely in ceramics, lepidolite is finding new uses in enamels and in heat-resisting glasses such as Pyrex and in sealed-beam automobile headlights. While modern mining methods have brought prices down, said Mr. Clark, the United States has few high-grade deposits and most of our needs are filled from imports.

The paper on "Mining of Mica in Brazil by Stripping Operations" by W. J. Willard, Principal Production Specialist, F. C. A., was read in his absence by Mr. Bowles. Much labor was saved in these operations by using bulldozers and wheeled scrapers to strip these deposits but costs were too high at many of the deposits to justify their operation now that the great war needs are past. The ensuing discussion revealed little possibility for the application of these stripping methods to deposits in the United States and Canada.

In "Quartz Goes to War Again," Samuel G. Gordon, Curator of Mineralogy, Philadelphia Academy of Natural Sciences, described their use in both World Wars. The greater demands of the last war, he said, made necessary the training of many workers in the cutting, polishing, and inspection of the crystals. In closing he said that we now have ample reserves of good quartz crystals to meet any future needs.

At the luncheon Dr. H. B. Allen, chairman of the Philadelphia Section and a director of the Institute, introduced President Harvey S. Mudd, of the A. I. M. E. According to Mr. Mudd the industrial minerals industries can look forward to their highest peace-time demands in spite of slow resumption of industry in all the invaded countries except Russia. England, he said, is reconverting slowly as most of the war workers are going into construction work. The French, according to Mr. Mudd, are busily expanding their industries to take over much of the business German industry will lose and other countries will also profit at Germany's expense. In this country, he said, the labor shortage is the worst handicap with high taxes next. He predicted a long-term upward trend for years to come.

Mr. Mudd also mentioned the annual meeting of the A. I. M. E. to be held at the Palmer House in Chicago on February 25 to 28, and the 75th anniversary meeting to be held in New York in September, 1946.

At the afternoon session Felix B. Shay, Foote Mineral Co., described "Some of the Problems in Fine Grinding of Nonmetallic Ores." His company, said Mr. Shay, does custom grinding of almost any mineral to any desired fineness. The wide variety of equipment used includes ball, rod, pebble, conical, roller and special mills, air classifiers, screens, crushers, driers, kilns, magnetic separator, mixers, etc., but additional equipment is to be added to improve the efficiencies on some materials. Some of the mills, he said, are water cooled to dispel the heat created in grinding and in a few cases it was necessary to mix dry ice with the charge. He also discussed some of the difficulties encountered in meeting color, chemical and other specifications.

Mr. Shay then stressed the necessity for mechanization and safety and health measures in modern industry. Modern labor, he said, deserves a wage which makes wheelbarrows obsolete and replaces them with car unloaders, lift trucks, etc. He also pointed out the direct and indirect economies effected through dust collectors, and safety shoes, hats, goggles, etc.

G. E. Seil, of Day and Zimmerman, consulting and designing engineers, in discussing "Nodulizing Fine Ores," said that nodulizing is the best way to make large pieces from small ones if heat does not damage the material, and that nodulizing is best done in rotary kilns. He also stated that there are 30 variables in rotary kiln operation which can give trouble and of these the most important are: rate of speed, rate of rotation, slope of kiln, etc. These, said Mr. Seil, can all be held steady and the only one which should be varied is the rate of heat liberation per foot of kiln length.

Mr. Seil also said that the use of a directional flame from multiple burners elimiates many of the disadvantages of other methods, such as uneven burning, kiln rings, etc., and is more efficient where it can be applied.

In discussing "Heat Transfer in Rotary Kilns," S. M. Shallcross, consulting engineer, said that the cement industry introduced the rotary kiln about 1900, that the lime industry began using it on a large scale in 1920, and that it was later adopted by other industries. In spite of nearly 50 years of use, he said, comparatively little is known about heat transfer in rotary kilns. Mr. Shallcross then stressed the necessity for constant even control of all phases of kiln operation and said that operation at too low a temperature sets up many adverse conditions.

"Firing Rotary Kilns with Powdered Coal" was the subject discussed by W. C. Knoblaugh, Basic Refractories, who said its use gives close and rapid control of burning temperatures.

A paper on "Searles Lake as a Major Source of Lithium," by W. A. Gale, American Potash-Chemical Co., was read in his absence. The production of lithium was begun in 1938 and most of the output in recent years was used in war industries. He said that 17,500 tons of brine is now being pumped daily from a 70 to 90-ft. depth. In evaporating this brine, he said, the various constituents tend to separate out at various points.

U. S. Army Engineers Lauded by Their Chief

A tribute to the U.S. Army Engineers, by Lieutenant General Eugene Reybold, Chief of Engineers, has appeared under the title of *Engineers in World War II*. General Reybold accorded the units engaged in construction work high praise, and also gave full credit to the American construction industry and engineering profession. The second section of the booklet outlined the many achievements of the Engineers.

Alabama Limestone Plant Contributor To T.V. A. Wartime Neoprene Output

Scene in the Guntersville Limestone Company's mine, showing air drills in operation.

another ON THE SPOT report

NOW that the war is over we are learning more and more about the countless ways in which the non-metallic minerals industries contributed to the war effort. One such contribution was the production of high-grade chemical limestone for use in the manufacture of calcium carbide for synthetic rubber neoprene. A leading producer of such stone was, and still is, the Guntersville Limestone Company of Chattanooga, Tenn. This company on December 2, 1942 began the construction of a crushing and screening plant near Guntersville, Alabama, which went into operation in March, 1943. It has since produced 15,000 tons per month of ½- to 1½-inch crushed limestone with a calcium-carbonate content of over 98 per cent. Electric current for this plant comes from Guntersville Dam 6 miles away. Shipment is by barge on the Tennessee River to a T.V.A. plant at Muscle Shoals, Alabama.

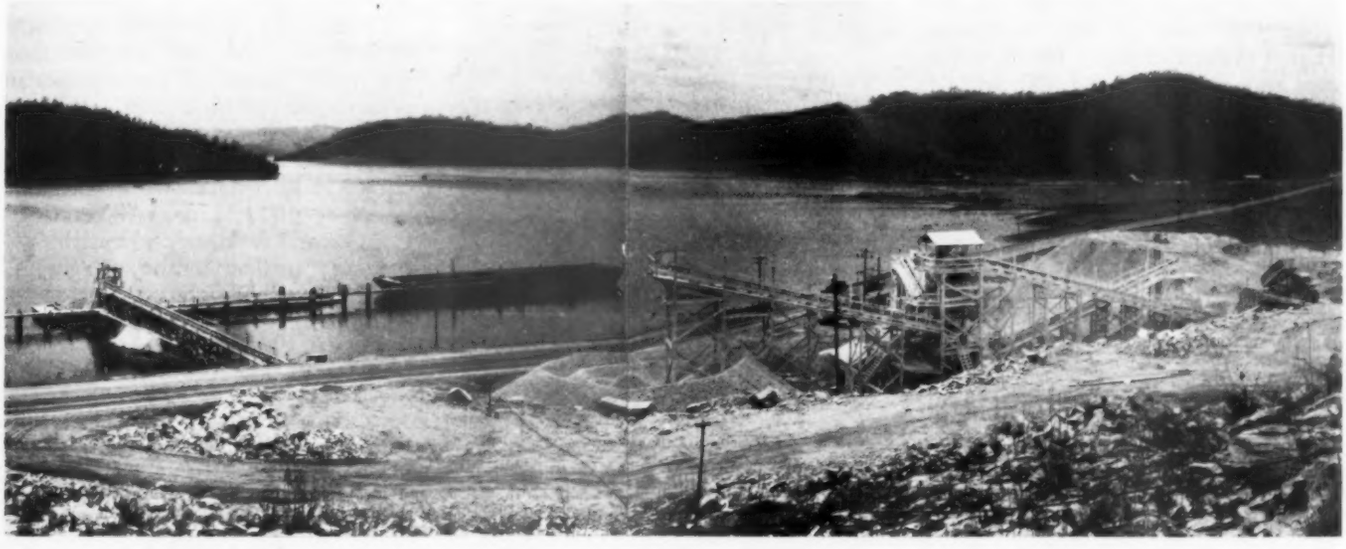
This development really began when the Tennessee Valley Authority bought this deposit on the Tennessee River 10 miles west of Guntersville. It then advertised for a contractor to mine, crush, screen and transport the stone of the desired specifications for calcium carbide manufacture on a tonnage contract basis. Frank E. Nabers, general manager, at that time manager of the Gager Lime Manufacturing Company at Sherwood, Tennessee, formed a company to bid on the contract to produce this stone and was the successful bider.

As the limestone seam is horizontal, the room-and-pillar drift method was chosen for developing the mine, with 40-by-60-foot, diamond-shaped rooms and pillars. All went well until, about 700 feet back from the face, a cave was encountered nearly parallel to the face. This cave varies from 10 to 50 feet in width and is nearly 500 feet long. It extends about 150 feet above and 30 feet below the mine level to water level which is the same as that of Guntersville Lake. A stream of water 3 inches in diameter drops from the roof of the cave to water level. This stream formerly supplied a spring which is now under lake level.

While the cave is full of beautiful stalactites and stalagmites it nevertheless created a difficult mining problem. This was solved by cutting into the cave on the opposite side of the original entry and filling in at that point to provide a roadway across it.

The drilling in the mine is all done wet with Cleveland wagon drills and Ingersoll - Rand column - mounted drifter drills. The air for drilling and other purposes is supplied by two 400-c.f.m. Ingersoll-Rand and a 350-c.f.m. Davey compressor.

At the mine opening the stone is



View of plant on Guntersville Lake with plant at right and barge-loading dock in background.

Shovel loading truck in the company's mine.

dumped into a hopper from which a Traylor plate feeder discharges it into the 25-by-40-inch Iowa Manufacturing Co. Cedarapids ball-bearing jaw primary crusher. A 36-inch by 130-foot belt-conveyor carries the stone to a 6-by-12-foot Tyler Ty-Rock 2-deck screen. The plus-1½-inch oversize off the top deck of this screen is chuted into a 3-foot Traylor Type TY gyratory crusher and returned on a 24-inch by 90-foot belt-conveyor back onto the main conveyor ahead of the screen.

The minus-½-inch material through the bottom deck of this screen is carried on a 24-inch by 75-foot belt-conveyor to a fine-sizing screen over a 2-compartment bin. This makes ½-inch to 10-mesh road stone and minus-10-mesh agstone.

The ½-to 1½-inch prime product passing over the bottom deck of the screen is carried on a 24-inch by 75-foot belt-conveyor to a stockpile. The conveyor head pulley is 40 feet above the top of the reclaiming tunnel under the pile. The live-storage capacity is about 1,500 tons.

The reclaiming tunnel from this stockpile extends under a highway to a 400-foot barge-loading dock in the lake. The 24-inch by 350-foot reclaiming and loading conveyor has a capacity of 300 tons per hour. The stone is loaded from this conveyor into barges averaging 800 tons capacity.

The barges, which are leased, are towed 2 or 4 at a time, depending on their size, by a leased 350-horsepower Diesel tow-boat a distance of 95 miles to Muscle Shoals.

Two men operate the crushing plant, one at the crusher feeder and the other at the screenhouse. A bell system connects these stations. Two men are located at the loading dock to move and load the barges. The reclaiming-loading conveyor is controlled from the dock and is entirely independent of the plant.

Part of the cavern which was uncovered by mining operations.

George Henley is plant superintendent.

An all-color, 16 mm., sound version of a film portraying the story of the blasting cap has recently been completed by the Institute of Makers of Explosives. The purpose of the film is to acquaint the public with the legitimate use of caps in industrial blasting, as well as with the dangers of handling by uninstructed persons and children. Prints of the film are available on request to the Institute of Makers of Explosives, 103 Park Avenue, New York 17.

Veracruz (from page 63)

drainage pipe, insulating material, reinforcing steel and a number of cast iron and steel castings were also obtained from manufacturers in Mexico.

Miscellaneous In the kiln department draft gages were supplied by the Ellison Draft Gauge Co., the electrically operated kiln revolution counters were supplied by Veeder Root, Inc., the gas analyzer was of Hays Corp. manufacture, Leeds & Northrup Co. supplied a double-range panel indicator and an optical pyrometer.

A great amount of the electrical equipment that had to be purchased was supplied by Crocker Wheeler Electric Co., Gregory Electric Co., Duquesne Electric & Manufacturing Co., Belyea Co., and Electrical Engineering & Construction Co.

In the waste heat and power plants considerable equipment such as pipe, flanges, studs, gaskets, valves, regulators, nipples, tees, ells, reducers, etc., were supplied by the Crane Company, Elliott Company, Swarthout Company.

A number of drives, sheaves and pulleys were supplied by the Allis-Chalmers Mfg. Co., Eagle Iron Works and Fulton Iron Works, each supplying a great number of castings.

On the kilns, coolers, dryer and other transmissions "V" belt drives are used. On feeders and incidental small drives chain and sprocket transmissions through Falk and Foote speed reducers are used. Goodyear and Gates "V" belts were used.

In the elevator pits in the crushing and packing departments 1½-in. Economy sump pumps have been installed to take care of any seepage into these pits.

During the construction period a modern machine and electric shop was built. Some of the equipment used in the machine shop consists of a pipe machine; a lathe; a radial drill; a planer; a pipe-threading machine; a horizontal wheel press; a punch & shear; Linde Air Products Co. Oxweld welding and cutting apparatus; a floor crane; a general forge and allied and incidental equipment.

Transfer of ownership of the Snohomish Sand & Gravel Company from Paul Heyner to Arthur F. Stobb has been announced at Snohomish, Washington. The plant, located on the Pilchuck River, will reopen after a two-year shut-down.

COMPRESSED AIR A PRODUCTION FACTOR AT LIMESTONE QUARRY AND PLANT

another P AND Q exclusive

DOWN in the quarry, up in the crusher and around the plant of Kelley Island Lime & Transport Co., at White Rock, near Clay Center, Ohio, compressed air has been put to a variety of tasks in getting out production for those who must have the quarry's products. A tour of the plant reveals why L. E. Smith, superintendent says, "We just could not operate without compressed air." This plant produces dolomite flux, crushed limestone, ground and hydrated lime, and refractory burned dolomite.

One of the jobs for compressed air in getting out these vitally-needed

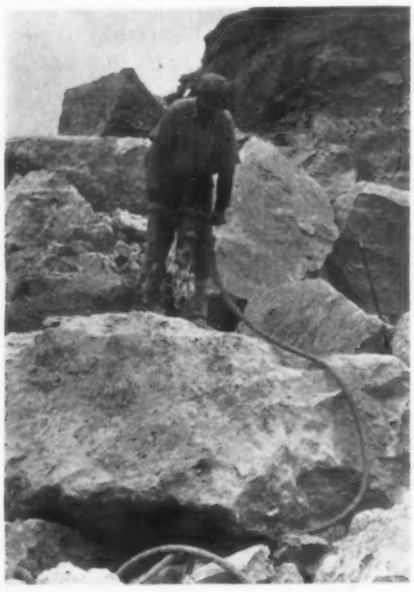


Fig. 1. Air-operated jack-hammers for secondary drilling are important tools in helping quarry meet production demands.

quarry products is in drilling. All secondary drilling (Fig. 1) for blasting is done with air-operated jack-hammers and the quarry experiences little difficulty in winter or summer in piping air power to the drills at any spot in the quarry.

The big well drills need compressed air, too, for their efficient operation, as the Gill bit sharpener (Fig. 2) is operated by compressed air. These bits could be dressed every morning by hand, but it is faster and much easier for the smithy to use air. The sharpener operates on the same principle as the forge hammer, driving blows on the big well drills — some weighing 225 pounds—against the die. Plug drills for the jack-hammers are sharpened by a somewhat similar, but smaller air-driven device.

NOTE:—Data and photos for this article were obtained by the Compressed Air Institute through the courtesy of the Kelley Island Lime & Transport Co., Cleveland, Ohio.

The economy of using compressed air to operate the steam-type hammers becomes apparent when it is realized that the quarry's only need for steam would be for the operation of these tools. By adapting the tools to air, there is no problem of getting up steam in the morning and keeping up pressure for the various odd jobs for which the tools would be used during the day. With air, pressure always is up and the tools are ready for instant use. For example, when the steam hammer is to be used for a job such as forging a link for the bucket conveyor, as shown in Fig. 3, the smithy gets the power for rapid, powerful blows from compressed air.

The air compressor at the quarry and forge shop level has a capacity of 350 c.f.m., however, it is coupled with 300-c.f.m. air compressor up at the crusher plant and kiln level of the plant, so that the load may be held in event a brief shut-down of either compressor is necessary. Air pressure of about 100 pounds is used. The larger compressor has been faithfully serving the quarry for approximately 25 years with a minimum of maintenance expense. The first major improvement on the compressor was made last year when new air ends and aftercoolers were installed.

The air from these compressors finds a versatile list of applications at the quarry and in the plant. In

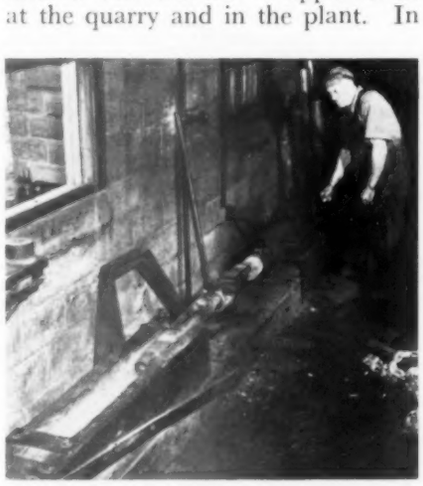


Fig. 2. The blacksmith shop at Kelley Island Lime & Transport Co. quarry carries on several tasks with the help of compressed air. Here, this versatile power is being used on a bit sharpener, driving forge-hammer blows on the die to sharpen the big well drill bits.

the maintenance shop and out around the equipment and buildings, air drives the rivet hammers, chipping hammers, and drills for boiler work. Air outlets well spaced throughout the property make it possible to use these easily-handled

Fig. 3. This "steam" forge hammer is operated by compressed air. The smithy uses it for all manner of jobs. Power always is ready.

and effective tools in place of slow and tedious hand tools. That means lower maintenance costs at the quarry.

Production goes faster because compressed air is used to clear the tube of the valve bagger and economies in storage space are effected because compressed air is applied to loosening and removing lime in the bottom of bins. Frequently 40 to 50 tons are removed in this way. If this amount of lime were permitted to cake over, that much storage space would be lost in the future. All around the plant and all day long, compressed air is at work to get better production or to lower maintenance costs.

The Clay Center plant is in that strip of Ohio famous for the quality of its finish lime. The plant operates rotary kilns for refractory lime and upright kilns for finish lime. One of the other compressed air applications in production is for spraying burned dolomite refractory with oil. Another application is in the crushing plant. Cars, two at a time, bring the limestone from the quarry to the big primary crusher. The air hoist (Fig. 4) is used to tip a car weighing 6 tons to empty its 8½-ton load into

(Continued on page 69)

Impact Crusher at McCorkle Plant Produces High Proportion of Fines

another ON THE SPOT report

By WILLIAM M. AVERY

THE McCorkle Stone Company of Milroy, Indiana, a few weeks ago completed the installation of one of the Model 3030 double-impeller impact crushers recently developed by the New Holland Machine Company. The crusher, which is the third unit of its kind built by the manufacturer, had been in operation only about three weeks when we visited the plant, and we had some misgivings about obtaining enough factual information to support the kind of article which so important a development deserves.

The vibrating feeder, now hand controlled, will later be connected with the mill drives to maintain maximum load.

It was an agreeable surprise, therefore, to learn that in the short space of three weeks this equipment had not only accomplished everything in the way of performance claimed by the manufacturer, but had swung into full production almost immediately. With run-of-the-quarry feed stone ranging in size up to 30 inches, this new crusher is producing 100 tons per hour of minus 1-inch material with only 80 installed horsepower. The impellers are driven separately through V-belts by two 40-hp. motors at 700 r.p.m., and even at this relatively moderate speed 40 per cent. of the feed is reduced to agstone. The owners feel that at 900 r.p.m., which is the recommended top speed of the unit, the output of agstone could easily be increased to 60 per cent.

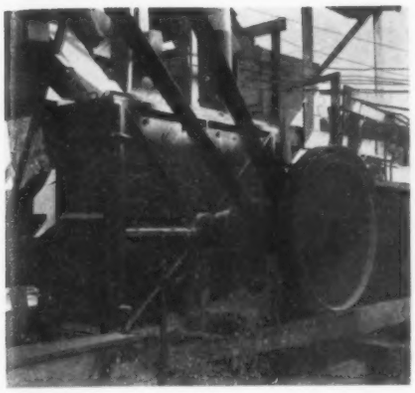
The impellers of the Model 3030 are carried on horizontal shafts and revolve clockwise and counterclockwise with their tops running away from each other. The rock, entering from either side is struck by the impeller bars and thrown against the breaker bars under the reinforced steel top, the crushing being done by impact rather than by squeezing. The process continues until the stone has been reduced to the required size and passes around the impellers and out through the discharge opening in the bottom. The impellers are 36 inches in diameter and weigh 3,200 pounds each. Each impeller is fitted with three 400-pound manganese-steel bars, making the combined weight of the two impellers about 4½ tons.

In addition to the high percentage of agstone which the new mill is producing at the McCorkle plant, the operators report that the output is as nearly a perfectly cubed material as they have ever been able to produce. This is particularly noteworthy because the rock has a strong tendency to slab. As a result of being able to produce cubed material in the primary crusher, other crushers in the plant have shown a marked increase in capacity since the new machine was placed in operation. Screen capacities have also increased.

The double-impeller impact crusher discharges into a bucket elevator. Feed hopper is at left.

The primary crusher at the McCorkle Stone Company, Milroy, Indiana, with its screen and loading bins, can produce a large part of the plant's output without additional processing.

The decision to install an impact primary crusher at this plant was not reached by the coin-flipping method or by giving undue weight to the enthusiasm of manufacturers' sales representatives. For years the McCorkles had pulverized with hammermills. The stone from their quarry was so hard that it had been necessary to turn hammers twice daily. In July, 1944, the owners installed a 2-cage 36-inch Stedman disintegrator for producing agstone, despite the manufacturer's misgiv-



This 2-cage, 36-inch disintegrator produces 30 tons per hour of agstone from minus ¾-inch stone.

Asphalt stone and general-purpose roadstone are produced in this gearless crusher.

With the new crushing equipment, the company has doubled output of agstone. Most deliveries are made in spreaders.

ings that under such extreme punishment the cages would soon become so badly out of balance that it would be impossible to operate the machine.

In their considerable experience with hammermill hammers the owners of the plant had found that tool-steel hammers wore out more uniformly than those made of manganese steel, and they reasoned that the same would be true in regard to the cages of the Stedman disintegrator. Accordingly tool-steel cages were furnished, and the impressive total of 25,000 tons of material was passed through the disintegrator before the original cages had to be replaced, and they were still in perfect balance when removed from service.

It was their favorable experience with the Stedman disintegrator that ultimately sold the company on the installation of the New Holland Company's double-impeller crusher, for the two machines embody the same basic principle of operation. This is said to be the first instance in which the disintegrator has been used for the production of agricultural limestone. The unit is producing agstone at an average rate of 30 tons per hour, and under optimum conditions has even put out as much as 35 tons per hour. The feed is minus ¾-inch stone. The small cage is driven by a 20-hp. motor; a 30-hp. motor drives the outer cage.

The McCorkles are particularly pleased with the flexibility of their operations since the installation of the New Holland crusher. The primary crusher can actually function as a separate plant, for new bins and a 3- by 8-foot Deister Machine Company Plat-O screen were included in the installation. The crusher is fed by a Jeffrey-Traylor No. 5 vibrating feeder with a 30- by 84-inch pan. The feeder is controlled at present by means of a rheostat, but eventually it is planned to install automatic electrical control which will maintain a constant load on the mill-drive motors.

Minus-1-inch material from the primary crusher is stored in a surge bin after passing the screen and is fed by a belt-conveyor to an adjacent plant in which the disintegrator and a Kennedy No. 19 gearless gyratory reduction crusher are set up. The latter is used to produce asphalt stone and other road stone.

On 207 connected horsepower the McCorkle Stone Company is now producing about 60 tons per hour of agstone, a ratio that would be regarded as quite favorable in any plant. The new primary crusher has increased the production of agricultural limestone at least 100 per cent., and the output of other sizes of material has more than doubled. Indeed, the primary crusher has over strained the capacity of the existing equipment for recovery and haulage, and a large shovel will have to be put in the quarry before the full potentialities of the new setup can be developed.

View of the primary crusher from the drive side. Each impeller is driven by a 40-hp. motor.

The McCorkle Stone Company operated at a site just outside Milroy, Indiana, for 19 years until the deposit was exhausted. About a year ago the plant was moved to the present location about 5 miles west of the town. The new deposit has an unusually high $CaCO_3$ equivalent, and there is sufficient stone for a number of years at the present rate of production.

Compressed Air

(*Continued from page 67*)

the crusher. The hoist then pulls the car back onto the track. Ease of control and ample, resilient power makes air suitable for this job.

Ample air compressor capacity, a good distribution system for air power and an alertness on the part of management in applying air to many jobs has enabled this quarry to capitalize fully on its investment in compressed air equipment.

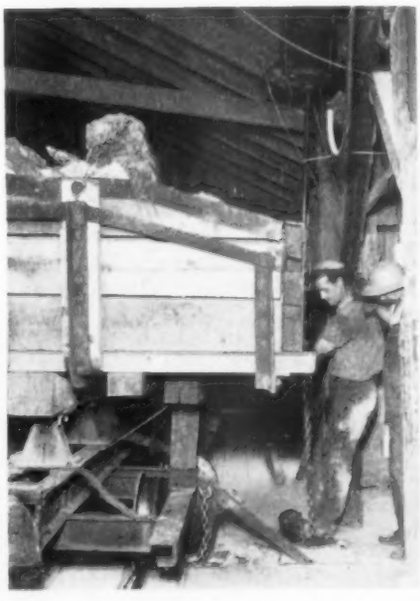


Fig. 4. A compressed air-operated hoist is used to tip these cars which weigh over 14 tons loaded.

Topeka Firm Has Novel System For Mixing and Delivering Fines

By R. D. HOUDYSHELL
Victory Sand & Stone Company,
Topeka, Kansas

another P AND Q exclusive

THE past five years have seen a steadily increasing demand for more fines in fine aggregate for concrete. Architects have been striving for quite some time to obtain the maximum of fines passing the 100-mesh screen for use in architectural concrete.

Until this year, no satisfactory manner of providing this type of sand had been devised by the producers in Topeka, Kansas. The Kansas River simply does not carry enough sand of this size to warrant installing settling cones. Exhaustive tests have been run, and a maximum of two to three per cent. has been tops in this vicinity. Obviously, in a mix designed for a minimum of 2 per cent. and up to as high as 10 or 15 per cent. passing the 100-mesh screen, this was too small an amount to justify trying to save the fines from the overburden.

With the advent of war building in 1942, the use of this type of aggregate received an added impetus from the Army Engineers. They insisted on 2 to 10 per cent. of this fine material in their aggregate. There was one alternative solution to the fines problem. If the contractor was willing to add an additional half sack of cement to the cubic yard of concrete, he could omit the fines in the sand, and much of the concrete for Army projects in Topeka was poured in this manner, with sand selling for fifty cents per ton, and cement a little more than that per 100 lbs. To continue adding this half sack of cement seemed to many contractors to be a mild type of insanity.

A partial solution was discovered last year by a competitive producer, who found in a nearby field, far from the river, a ledge of sand that had been deposited there in some former flood. When tested this sand was found to have 40 to 45 per cent. passing the 100 mesh screen.

A job was furnished that year by shipping the regular sand via rail and hauling the fines to the job via truck. On the job, the contractor mixed 10 per cent. of the fines with his aggregate, and thus obtained an aggregate containing approximately 4 per cent. passing the 100 mesh screen.

However, successful as this was, several obvious disadvantages can be seen at a glance:

(1) The contractor had to provide *two stockpiles* for his fine aggregate instead of one.

(2) He had to reserve a compartment in his batcher for the 100 mesh material.

(3) In a job where all aggregates were shipped *via* rail, he had to employ numerous trucks for hauling the fines.

On a paving job, where speed is paramount, these disadvantages were costly, especially in view of the critical labor shortage.

The Victory Sand & Stone Company wanted a method of producing the material as a total aggregate, thus saving the contractor time, labor and money. Our plant was designed and built to produce all the various gradations that could be devised with ordinary sand. The only thing lacking was some method of mixing in the fines. The management decided on a screw conveyor as the most logical type of conveyor for the almost dirt-like material.

We installed a 20-foot section of the auger in such a position as to dump the fines onto the tunnel belt just before the material went into the bucket elevator. From there it was carried up into the loading bins and on into the cars.

This auger, or screw conveyor, as manufactured by the Link-Belt Company, consists of a steel bar 2 inches wide and ⅜ inch thick formed into a helix, and fastened to the shaft by means of steel lugs. Power is furnished by a 15-horsepower electric motor, and the maximum capacity is approximately 20 tons per hour.

The Koss Construction Company, of Des Moines, Iowa, was the successful bidder this spring on a paving project at the Army Air Base located a few miles south of Topeka. The Army specifications set up a mix requiring from 2 to 10 per cent. passing the 100 mesh screen in the fine aggregate, and the contractor was faced with the problem of obtaining the material from a territory that had never produced it in a total aggregate form. Labor was in a critical stage. To maintain two stockpiles and an extra bin in the batcher meant precious labor and time wasted. At this point Victory Sand & Stone Company came forward with an offer to furnish the fine aggregate in a mixed form ready to use. There was no question of receiving the materials award. If we could produce, the job was ours.

M. M. Small, manager of the Victory Sand & Stone Company, immediately plunged into the many complex problems involved. First, there was the problem of obtaining the fines and hauling them to the plant. A survey was made of the surrounding territory. A field was located, and tests were run. The material tested approximately 40 per cent. past the 100 mesh screen. There was also the problem of getting it to the plant. A company dragline was moved to the field, and using a fleet of trucks, about two thousand tons of the fines were hauled to the plant, where, with the use of another crane, they were stockpiled near the screw conveyor.

The most critical problem concerned labor. From a normal 25-man plant in pre-war days, the force had shrunk until we had 12 men on the payroll to start the new season.

The plant is built in such a way that, ordinarily, two men can load our normal output of cars. However, here was a different set-up. To get into volume production, it would take at least two men shoveling fines into the screw conveyor, and another man would be needed to keep cleaned cars ready for loading. Thus, instead of two men, we found we needed at least five in order to get any kind of volume. To take nearly half the force, and devote the greatest share of their time to loading cars would be quite a blow, but it was decided to attempt it.

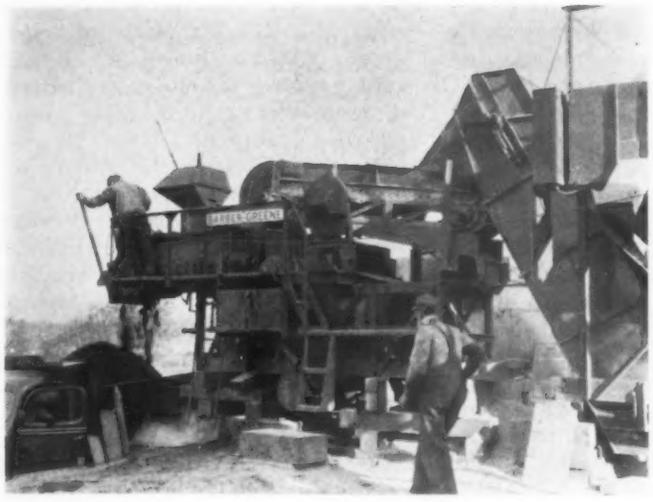
Several trial batches were run and tested by the Kansas State Highway Engineering Department, testing agency for the Army in Topeka. It was determined from these tests how to mix several grades of sand together to meet the specifications.

All the pins, sidebars and center links on the bucket elevator, and the return roll idlers and troughing idlers on the tunnel belt were rigidly inspected and replaced where necessary. When we were ready, the contractor gave the go-ahead word for loading approximately 5,000 tons to create a nice working stockpile.

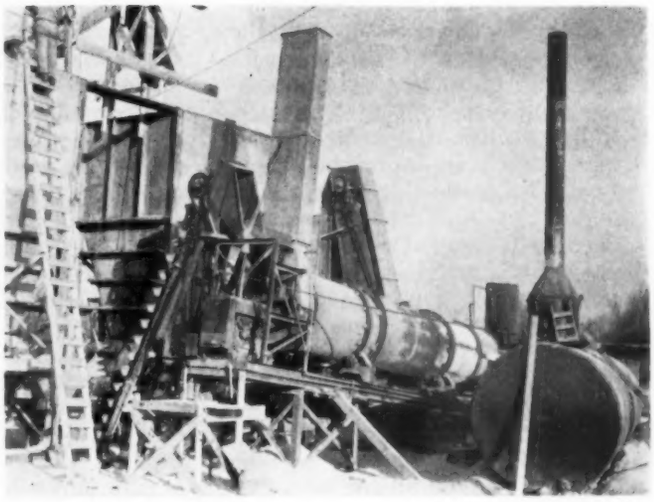
We strove to get 140,000-pound

(Continued on page 74)

Continuous Hot-Mix Plant Produces 78 Tons of Asphaltic Concrete an Hour



Mixing unit, loading material into truck at right.



Aggregate bins, cold elevator, dryer and hot elevator.

another P and Q exclusive

THE continuous hot-mix central plant of John McCourt & John P. Condon Corp. at Burlington, Mass., is a good example of the assembly of individually-portable units into a central set-up of high capacity and accurate sizing and gradation control. This corporation, with headquarters at 910 Huntington Ave., Boston, is an old established firm of paving contractors which owns and operates 8 different plants in various sections of New England. In recent years the corporation has been peculiarly successful in the securing of contracts for airport paving; setting up asphaltic-concrete plants in nearby locations; and completing its contracts on time or ahead of schedule.

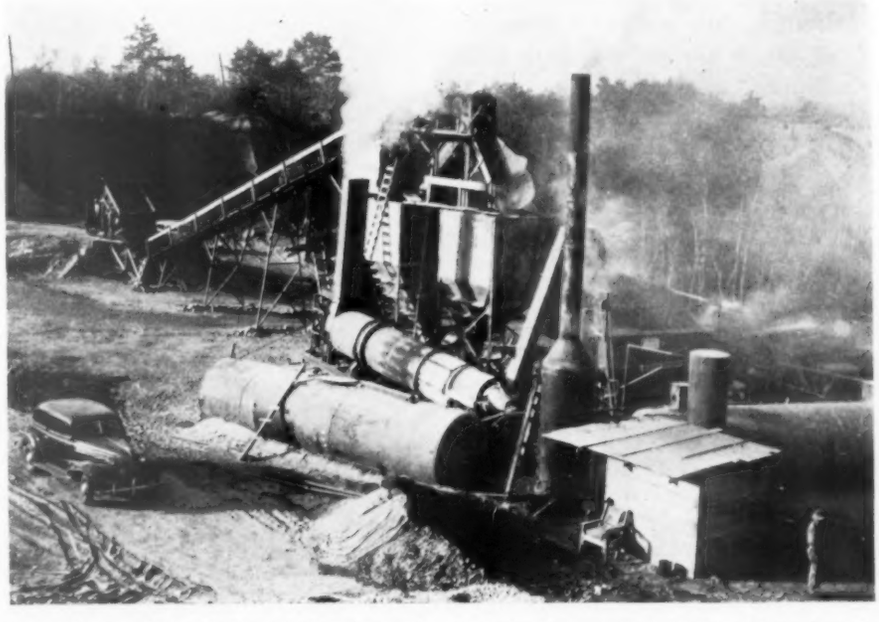
The continuous hot-mix central plant at Burlington, officially known as Barber-Greene Plant No. 2, is operated by R. T. Knox, superintendent for the owning corporation. It was formerly erected and operated at another location many miles distant, and was disassembled, the individual units shipped to Burlington, and reassembled in a little more than two weeks after the corporation was awarded the runway paving contract at Bedford Airport, about 7 miles west of the plant location. The plant started running at Burlington about October 1st, 1942.

The present location adjoins the Burlington pit and plant of the Highland Sand & Gravel Co., whose headquarters are in West Roxbury, Mass. All aggregate is purchased from the Burlington pit and plant. The words "pit" and "plant" are used advisedly, because the gravel is produced in the company's 250,000-ton-per-year plant, while the sand is produced with special dry-sand-screening apparatus that has been installed in Highland's pit. Both these operations have been described in these pages.

Strange to say, 8 per cent. of the sand purchased for the No. 2 hot-mix plant is larger than any of the gravel particles. This is because the sand, produced by the dry-sand-screening apparatus, is purposely made with 8 per cent. minus ⅞ in. gravel, the balance being minus ¼ in. sand, of which another 6 to 8 per cent. will pass through a 200-mesh screen. The gravel, produced by the main plant, is what is called "pea stone" in New England, and is minus ½ in.-plus ¼ in.

There are no stock-piles of aggregate at the central hot-mix plant, the operation relying for its supply of raw material entirely on the 60-ton-per-hour dry-sand-screening apparatus and Highland's stock piles.

Transportation of aggregate to the hot-mix plant is by means of two 8-cu. yd. rear-dump trucks and the haul each way is a little less than ¼ mile. The trucks haul either sand or gravel, but never mixtures of the two, even though the sand is decid-



General view of the McCourt & Condon continuous hot-mix plant at Burlington, Massachusetts.

edly a blended aggregate, and the sand and gravel are combined just before they enter the drier. This separation of the two aggregates is done in order that their proportions may be accurately controlled when they are combined.

The layout of the hot-mix plant differs in several respects from the conventional Barber-Greene arrangement. Instead of using a 2-compartment plant feed hopper, the owners installed a single-compartment 8-yd. hopper which is approached by a ramp. The truckloads of aggregate are dumped into this hopper and immediately emptied out by a Kennedy-Van Saun 24-in. rubber belt conveyor, which is 92 feet long, has an 18-deg. slope, and a speed of 200 r.p.m.

The conveyor feeds into either of two 35-ton steel bins, one for sand and the other for gravel, a butterfly gate being used to divert the flow of material coming off the belt. Beneath each 35-ton bin is a gate through which the sand and gravel flow into a 2-compartment 1½-cu. yd. wooden receiving hopper.

Sand and gravel are withdrawn from the receiving hopper by means of a Barber-Greene reciprocating plate feeder which is equipped with capacity inlet gates to provide accurate volumetric control of the amount of each type of aggregate. From the plate feeder the proportioned aggregate mix falls into the boot of a Barber-Greene chain bucket elevator. This "cold" elevator feeds a Barber-Greene No. 833 oil-fired single-drum drier.

The fuel oil for the drier is stored beside it in an 8000-gal. horizontal tank. No. 5 fuel oil of 16 to 18 deg. gravity is purchased from Colonial Beacon Oil Co. and delivered by tank truck. The reason for the extra-large size of the fuel oil tank is to provide ample storage space in case of possible interruptions to delivery.

As the blended aggregate is dried and heated it is discharged continuously into the boot of a Barber-Greene chain bucket "hot" elevator which feeds it onto the top deck of a 3-deck 3-by-6-ft. Simplicity gyrating screen. It is this screen which controls the accurate gradation of aggregate size. Square wire mesh is used on all decks; ¾ in. on the top deck; ¼ in. on the middle deck; and No. 10 on the bottom deck. Aggregate rejected by the top deck is wasted and is negligible in amount. Plus ¼ in. minus ¾ in. material falls into a 5-ton "coarse" bin below. Plus No. 10 minus ¼ in. falls into a 5-ton "intermediate" bin. Minus No. 10 falls into a 7-ton "fines" bin. All are Barber-Greene steel bins.

The sized material is fed out from the three gradation-control bins through individually-adjustable calibrated gates on an apron feeder. The control gates strike off volumetric amounts of each size of material to the desired percentages.

A Barber-Greene dual chain-bucket elevator carries the graded aggregate to an apron feeder which is interlocked with an asphalt metering pump on the mixer. Volumetric control of aggregate blending at the "cold" elevator and of the proportions of hot graded aggregate and asphalt fed to the mixer is automatic and continuous and results in great accuracy despite large output.

In the mixer, which is a Barber-Greene No. 848, hot asphalt of 120 to 150 penetration is mixed with the hot graded aggregate by twin pug mills. The asphalt is delivered in tank trucks. Stored in a 10,000-gal. horizontal cylindrical tank, the asphalt is heated by steam coils. The steam is provided by a 50-hp. vertical-tube coal-fired boiler. A transfer pump delivers the hot asphalt to the asphalt mixer tank, from which it is forced into the mix by a metering pump and through two sprays in the mixing box.

The mixer operator has extremely close control over the proportions of the mix and the thoroughness with which each particle of aggregate is coated with asphalt. He may raise or lower the pugmill discharge dam to increase or decrease mixing pressure and mixing time. He may increase or decrease the heat of the asphalt to increase or decrease its fluidity. He may increase or decrease the heat of the aggregate through cooperation with the dryer operator to prevent chilling of the asphalt. He may alter the pugmill paddle settings, although this is seldom resorted to as it means that the entire plant must be shut down. He may increase or decrease the proportionate amount of asphalt supplied to the mix. And he may alter the proportions of aggregate sizes, particularly by increasing or decreasing the feed of fines.

The mixer operator also controls the gate through which the hot asphaltic concrete passes into dump trucks that load underneath. A one-armed paperhanger with the itch is idle compared to him.

The entire plant is powered with gasoline motors. A Ford V-8 drives the 24 in. plant feed conveyor. A Le Roi drives the reciprocating plate feeder, the "cold" elevator, the dryer and the "hot" elevator. A Wisconsin drives the Simplicity gyrating screen, and a Buda drives the gradation and mixing unit.

At the time the operation was visited it had produced some 12,000 tons of asphaltic concrete and had lost a total of 15 minutes because of a breakdown . . . a pin broke in a sprocket chain. R. T. Knox, the superintendent, is insistent on proper lubrication and preventive maintenance. He claims his motto is, "Grease and oil twice as often with twice as much . . . and fix it before it breaks.'

View showing mixing unit (left); plant feed conveyor (upper right) is discharging into butterfly valve, thence into bins.

Mathieson Alkali Works To Double Plant Output

George W. Dolan, president of the Mathieson Alkali Works, Inc., of New York City, recently announced that the new plant being added to the Niagara Falls production facilities will double the output of sodium chlorite there. The cost of the building is estimated at $35,000, and the total cost of the improvements is about $323,000.

Use of Lime for Water Purification And Waste Disposal Grows Rapidly

By "ONLOOKER"

A LARGE railroad system reports tangible savings of over $2,500,000 each year resulting from the proper treatment of water supplies. If additional consideration is given to the many intangible benefits derived from the extended time between boiler washouts, less boiler maintenance and the greater mileage realized between shoppings, the actual savings would far exceed this figure.

This represents the experience of only one railroad. Were we to tabulate the results of the entire railroad system of the United States, the savings in dollars and cents would be truly great.

Not all carriers use lime in combination with other water-treating chemicals, but many of them do. The lime industry may well look forward to an expansion in the demand for its product by railroads during the post-war period, as during the war, notwithstanding the increasing use of Diesel-powered locomotives. Experience developed during war-time operation has undoubtedly proved that steam-powered locomotives have not outlived their usefulness, but on the contrary, will demonstrate heretofore-undeveloped power potentials which will be released concurrently with advances made in boiler construction and combustion practices.

Over a period of years and restricted only by reason of the immense job at hand in Japan, our civilian population has been becoming "soft-water conscious" and, in direct relation thereto, "sanitation conscious," too. This growing demand for properly treated water supplies is nationwide in extent. Communities making such supplies available to their residents encourage neighboring cities to do likewise. The proper disposal of waste waters similarly encourages multiple operation of plants throughout the country, rendering such waters impotent in harboring disease and refuse from domestic and industrial plants. Lime will be used in increasing quantities for municipal and industrial water-softening and sanitation purposes and the manufacturer of lime products would do well to survey the potential market in the normal area he serves. Much could be done, by encouraging the engineering agencies and by the lime manufacturers themselves, to help influence public opinion in communities where modern water-treating facilities are not yet in operation.

Shifts in population from one city or area to another may render plants obsolete or inadequate to make the necessary water supplies safe. This will require new construction and enlarged treatment works, some of which will use the chemical as well as the biochemical process.

Many government hospitals are being erected throughout the country for the proper treatment of returned veterans. Some of these veterans will return with diseases contracted from exposure to jungle and other conditions previously unknown in our country. Proper treatment of water supplies and proper sewage disposal will be imperative in the design and operation of these hospitals.

Public education on the need for extension of these facilities should be part of our plans for post-war development and will dovetail with needed construction work, insuring employment for thousands of workers for building in this field and subsequently for the maintenance of such plants. The very urgent need for such facilities will provide the present and future incentive for a sound, well-co-ordinated, safe water supply which would go far to raise and maintain the well-being and health of our urban population.

Lime would be prominent among the supplies needed for the operation of these plants and as a chemical would help to save millions of dollars in maintenance and bring other advantages incidental to the use of properly softened and treated

(*Continued on page 78*)

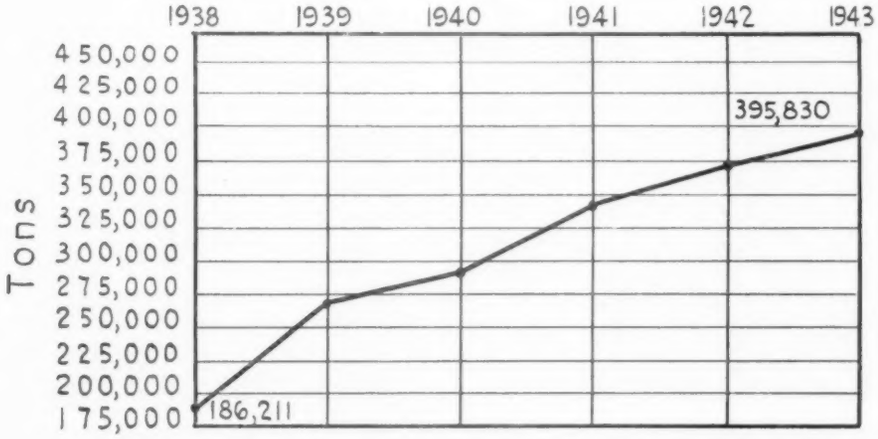
LIME SOLD IN UNITED STATES FOR WATER-PURIFICATION PURPOSES

Year	Lime Sold (Short Tons)	Lime Used for Water Treatment		
		Amount (Tons)	Average Value Per Ton	Percentage of Total
1943	6,596,615	395,830	$7.32	6.00%
1942	6,103,791	335,877	6.93	5.50
1941	6,079,417	319,244	6.49	5.25
1940	4,886,929	226,088	6.45	5.44
1939	4,254,348	251,193	6.35	5.90
1938	3,346,954	186,211	6.84	5.56

SEWAGE AND TRADE WASTE TREATMENT

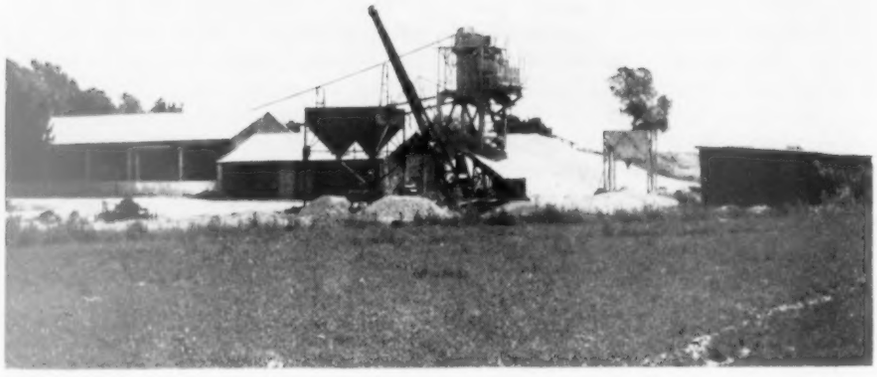
Year	Amount (Short Tons)	Average Value Per Ton	Percentage of Total Tonnage Sold for All Uses
1943	17,600	$7.16	0.27
1942	25,758	6.90	.42
1941	38,256	6.41	.63
1940	91,158	6.13	.39
1939	16,922	7.08	.40
1938	8,693	6.72	.26

Note: Because of definite advance in use of lime for sewage and trade-waste treatment in recent years, it is assumed that tonnage figures do not show this advance and that some manufacturers have reported sales under caption "Other Uses" or Water Treatment.



Graph showing amounts of lime used annually for water treatment, 1938 to 1943.

River Furnishes Powell Plant With Plentiful Material Supply



The auxiliary sand plant of Robert Powell & Company, Sacramento, California.

PLASTER sand, lime-putty and mortar are the three products which keep the plant of Robert Powell & Company at Sacramento, California, busy the year 'round.

The plant is located on the American River and the sand is pumped from the bed of the stream. A small timber dredge, anchored by cable to the shore, has been in service for many years but will be replaced this fall by a new 22- by 32-foot all-steel barge. On board will be a new 6-inch Morris centrifugal pump powered by a 100-horsepower motor which will bring the sand up from the bottom of the river and pump it through the 6-inch pipe-line over the levee to the plant.

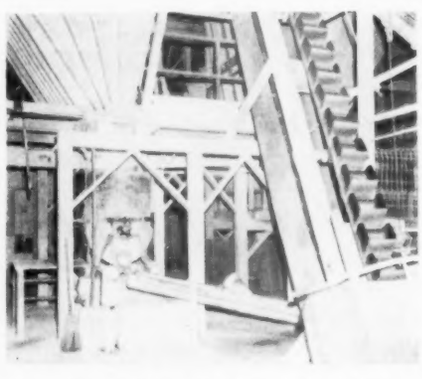
As the plant is located at a bend in the river, the current is constantly replenishing the sand supply, few pebbles and no large gravel being deposited. The pipe-line discharges over a 6- by 9-foot ¼-inch-mesh gravity screen set at a 45-degree angle. Any oversize material and trash are rejected and flumed away downstream. The sand drops into a large-capacity cylindrical settling tank, a bottom gate feeding the boot of the elevator which carries the sand up to the reinforced-concrete loading bins. Distribution to the eight bins is accomplished by a short belt-conveyor, the bins having a combined capacity of 270 cubic yards. Delivery trucks load in tunnels beneath the bins. An important part of the output is sold to the Southern Pacific Railroad as engine sand. The sand production averages about 45 tons per hour.

A small auxiliary plant is also operated over the levee to build up stocks of sand for those periods when high water forces the regular plant to halt operations.

The lime-putty and mortar phases of the operation were started several years ago and are housed in the main plant building. Lime is purchased from the Diamond Springs

By HARRY F. UTLEY

Lime Company, motor trucks bringing the 16-mesh product to the Powell plant where it is stored in elevated bins. A 5-barrel Joseph Wagner slaker is supplied from these bins and the resultant putty is allowed to age in two 12-ton-capacity concrete tanks, any surplus being stored in a 9- by 25-foot cylindrical steel tank. The putty is withdrawn and delivered to plastering contractors in 3-cubic-foot steel drums, or is used in the preparation of ready-mixed mortar which is mixed by a screw and pug-mill. From 10 to 30 per cent. of sand is used in the mortar mixtures as desired by the user.



The 5-barrel slaker (left) and the bulk-lime elevator.

One of the company's trucks in front of sand storage bins.

The mortar is delivered locally in dump trucks.

The officials of the firm are Robert Powell and his sons, M. R. Powell and Barrett Powell, the last-named being in the armed forces at present. Louis Hubert is the plant superintendent.

Solving Fines (*from page 70*)

capacity cars from the railroad whenever possible. The Santa Fe was very good about furnishing these larger cars, and thus we cut down quite a few on the total number of cars we had to load.

Once the job was started, our very competent superintendent, Joe L. Roe, not only kept the men going, but he also filled in vacancies caused by shifting men from the loading job over to sand trucks and to transit mixer trucks.

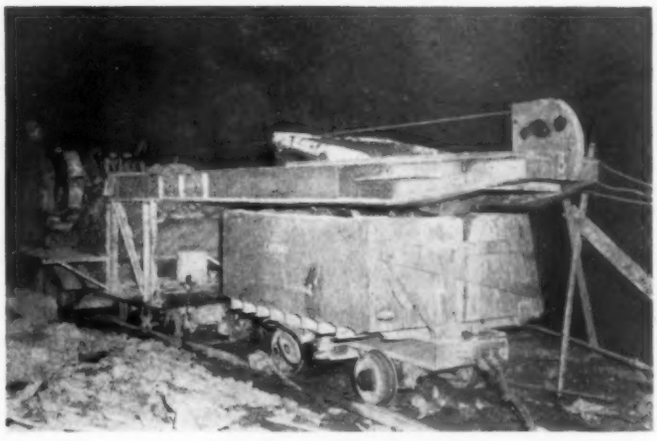
The entire job went off very well considering the labor shortage, and the difficulty in getting repair parts. Without a doubt, the hardest job in loading the cars was the shoveling in of the fines by the two men. Top speed on loading was 150 tons per hour. This caused the men to shovel approximately 13 to 15 tons per hour into the auger. They were aided in this somewhat by the use of a front end loader mounted on a Farmall tractor. With this, one of the men would stockpile 10 or 15 tons at the end of the auger, and then it was mainly a matter of caving it in at the proper speed.

The men did their job well. Every car was inspected by a State Highway engineer, and on the entire job we lost just three cars by reason of rejection by the engineer. None was rejected because of the fines. Rather they were short on the other end, lacking 4 points on the No. 8 screen.

The Victory Sand & Stone Company feels that it has an almost foolproof system for providing fines for any architectural job.

Mechanize Quarry at Stephens City Plant of M. J. Grove Lime Company

View looking down the inclined belt conveyor which moves stone from the new primary crusher to the rotary screen.



Stone from mine is loaded into 4-cubic-yard side-dump cars by a 1-cubic-yard scraper-mucker.

another ON THE SPOT report

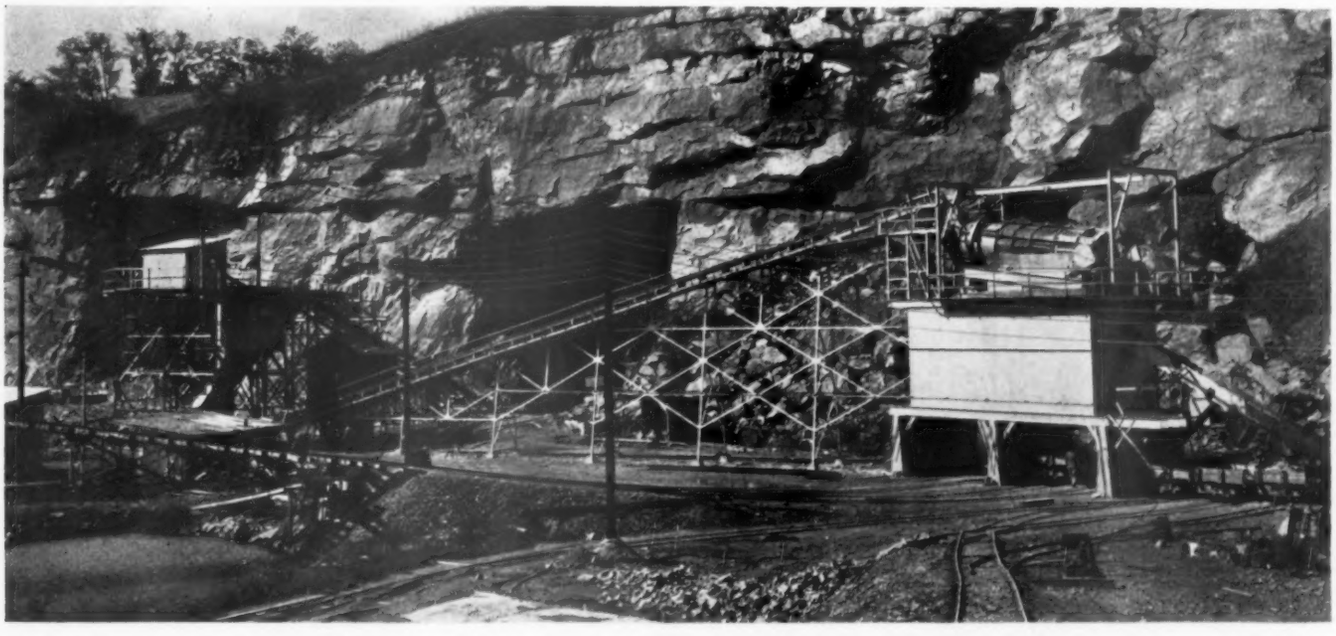
HAND operations on any extensive scale are gradually disappearing from the industrial scene, and even those relatively few plant operators who have opposed mechanization in the past have been largely won over by their painful experience with labor—or with the lack of it—during the war years. Concurrent with this changing attitude there appears to be developing a more general recognition of the fact that the common labor *per se* is a poor investment from almost any point of view. Employers are discovering that dollar for dollar they get better results from the employment of skilled workers at higher wages, even though the elimination or the reduction of common labor generally requires increased

By WILLIAM M. AVERY

capital investment. There has been a change, too, in the attitude of labor—an unmistakable urge to avoid hard, physical work whenever possible.

For a number of reasons the lime industry has been slower than most to mechanize its operations. Probably the most important reason is that in many open-quarrying operations the stone must be hand-picked for quality and this is usually done by hand-loading in the quarry. Extremely competitive conditions in some areas have also kept prices low, and this condition has had an inevitable tendency to discourage large expenditures for improvements. Another contributory factor in the past has undoubtedly been the plentiful supply of common labor in many lime-producing areas; labor-saving machinery is bound to seem rather pointless wherever there is an abundant supply of relatively cheap help.

The M. J. Grove Lime Co.'s plant located just outside of Stephens City, Va., provides an interesting case in point. Until recently this firm sort-



General view of new primary crushing and screening plant recently completed at the Stephens City, Virginia, plant of M. J. Grove Lime Company. New equipment will increase production more than 50 tons per hour, reduce labor in the quarry to a 35-man crew, as compared with 100 formerly employed.

ed all of its stone manually before delivery to the crushing and screening plant. In normal times it employed from 60 to 65 "contractors" —individuals paid on a tonnage basis for loading stone. With about 100 men working in the quarry it was possible to recover between 700 and

Side-dump cars discharge automatically into 50-ton steel hopper above crusher.

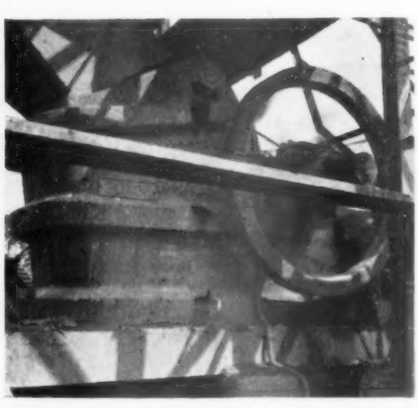
800 tons of minus 10-inch stone per day. While labor was plentiful and wage scales were low this method of operation, although scarcely ideal, worked well enough to discourage any drastic measures to improve upon it. The picture changed rather abruptly when the manpower shortage developed, and the management decided that the time had come to mechanize the operation, for production began dropping and costs rose at an alarming rate.

The work of mechanizing the quarry was begun in September, 1944, and although the installation will not be fully completed until next January, most of the new equipment was placed in operation several months ago. One of the company officials has expressed the opinion that the plant could not possibly be operated today on the old basis, since it would be virtually impossible to maintain an adequate crew in the quarry.

A 4-foot chain feeder feeds stone from the hopper to the primary crusher.

When the improvements have been completed production will run about 1,200 tons per 8-hour day with a crew of 35 men working in the quarry. This will mean an increase of more than 400 tons per day with about 1/3 the crew that was formerly employed. The additional capacity will make it possible for the plant to ship open-hearth and blast furnace stone as well as additional quantities of agricultural limestone and road stone.

At present some stone is still being recovered by open-pit operations, but the major share of the tonnage is coming from the mine workings opened some years ago, and eventually the entire operation will go underground. Stone in the mine is now loaded into 4-cu. yd. Easton Granby-type side-dump cars by a



The 30- by 36-inch jaw crusher.

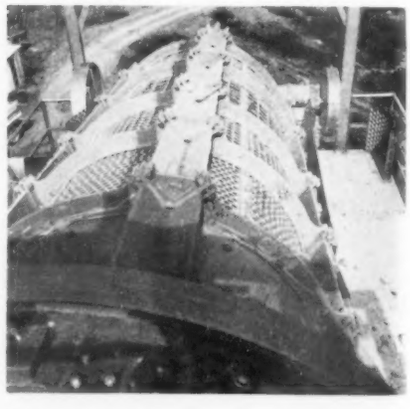
1-cu. yd. Sullivan CF-312 scraper-mucker. This loader is a standard machine except for the frame which was specially designed for incline loading. The 3-drum Sullivan cable hoist pulls a Holcomb M-52-10 scraper bucket. An additional loader, identical with the present one, is on order, and when it is placed in operation a second narrow-gauge track will be built on the incline.

The new crushing and screening plant which is located in the quarry opposite the mine entrance has a 50-ton steel hopper lined with rail sections, into which the mine cars dump automatically by means of an inclined rail. Stone is fed from the hopper to the 30- by 36-in. Traylor jaw crusher by a 4-ft. Ross chain feeder. The crusher is set at 10-in. maximum opening.

From the crusher the stone moves up a 36-in. by 149-ft. Link-Belt inclined belt-conveyor and is discharged into a 6- by 27-ft. heavy duty Telsmith rotary screen, where it is separated into minus 1¼-in., 1¼- to 3½-in., 3½- to 4½-in. and oversize. The oversize stone, ranging from 4½- to 10-in., drops into a steel chute which extends beyond the screen. Manually operated gates installed in the chute make it possible to load the material into any one of three quarry cars. These are hauled up a hoist incline and discharged into the lime kilns above the quarry. Some of this material is marketed as fluxing stone. The other sizes drop into a 3-compartment 120-ton steel bin from which they are discharged through gates into cars and hauled to the main crushing and screening plant or loaded directly into railway cars for shipment.

When the quarry improvements have been completed, 2 Lidgerwood single-drum hoists will haul the Easton cars from the mine. Trestlework and machinery structures throughout the installation are of steel construction set on concrete piers, and in addition the timber trestles which formerly supported tracks leading to the plant have been replaced with steel structures.

With their serious quarry problems solved, the management of the Stephens City plant is currently engaged in attempting to increase the efficiency and output of the vertical lime kilns. Two 1,200 c.f.m. induction blowers, operating at 1,750 r.p.m., are being installed at the base of each of the kilns to produce a positive blast and to prevent the 10 to 15 per cent. fuel loss caused by a recurring severe down draft.



A heavy-duty rotary screen, 6 feet in diameter and 27 feet long, is mounted over a three-compartment 120-ton bin.

The M. J. Grove Lime Co. operates crushed stone, lime, concrete products and ready-mixed concrete plants at Frederick, Md., and a flux-stone plant at Middletown, Va., in addition to the Stephens City plant. Robert B. Crothers is president of the company. The Virginia plants are supervised by F. Grove White, vice-president of the company.

THE LIME PLANT OPERATOR

BY WOLF G. BAUER

COMPARISON OF FUEL COSTS IN LIME BURNING

another P and Q exclusive

LAST month we touched in a general way upon the manner in which the various obtainable fuels in the United States are being applied to the burning of lime in rotary and shaft kilns, and pointed out some of the advantages and disadvantages. Let us now make some cost comparisons and discuss some of the many factors that must be included in order to arrive at relative comparison values.

Fuel, in many instances, can become a major item upon which may hinge the economy of the whole operation. It is not sufficient to use the price of a unit of fuel for a measuring stick, as there are many incidental investment, labor, power, and repair charges that must be added, each one different in amount with different fuels. Aside from these fixed charges for each fuel, the cost per ton of lime is influenced by two other main variables, namely, capacity and efficiency of the burning equipment.

Computing Efficiency There are many bases for computing efficiency, as it may be figured from a bought or available heat basis, or it may consider the kiln itself as a heat exchange unit, or the fuel itself as to the work it must perform. Power costs in applying the fuel and also in bringing the heat and heated gases into efficient contact with the lime, all affect overall heat economy. Since we are here dealing with fuel alone, we shall simplify our problem by considering merely the efficiencies in terms of heat work to be accomplished as against heat available for such work in the various fuels under discussion. Such extra costs as power and labor for kiln firing and operation are classed with overall kiln efficiency and will be discussed in later issues.

In computing the work to be done, we can divide the kiln or burning equipment into a stone heater, a calciner and further heater, and a product sensible heat recuperator. Most modern shaft kilns are, by nature of their construction and operation, endowed with these three units all in one, whereas rotary-type kilns must add them separately on each end to effect optimum heat utilization. For purposes of constructing the accompanying table, we have assumed that the kiln system is insulated to negligible heat losses from radiation and conduction, and that combustion for each fuel is without excess air losses. We base the work to be done by the stone heater as heating 100 per cent. $CaCO_3$ to 1650 deg. F., that of the calciner to calcining at 1650 deg. and heating the CaO to 2500 deg. F., and that of the recuperator to recover all sensible heat in the lime and returning it to the kiln. We have computed, therefore, the following heat requirements: 4.4 million B.t.u. per ton of lime without stone preheater or lime cooler, 3.1 million B.t.u. with cooler alone, and 2.3 million B.t.u. with cooler and preheater operating. This latter figure we can call 100 per cent. practical efficiency, since there is always more low-elevation sensible heat in products of combustion to preheat the CO_2 portion of stone (cooler recovering CaO portion) than is needed for this work (the amount used being governed by the preheater efficiency), and which, therefore, can take care of other heat losses not included.

Heat Values It is common practice to speak of fuel ratios of fuels, in which we compare units of weight or volume of fuel used to tons of lime produced. Such ratios translated into terms of efficiency are, however, generally clouded and misleading, since we must contend with the necessary evil of buying fuel on a weight or volume basis, rather than on a B.t.u. basis, or better yet, on an available B.t.u. basis.

Since fuels are most variable in their physical and chemical makeups, they must be evaluated on their net effect to a particular application. Mechanically held moisture not only displaces carbon products in the fuel, and so lowers its heat value, but also requires heat for vaporization and heating of vapor to exit-gas temperatures. Hydrogen is also a loss due to the latent heat of vaporization when burned to water; and this amount varies considerably in fuels. We find heat values of solid fuels given in terms of wet or dry fuel, and if we state it on an available heat basis, we must define the term "available" as well as the moisture condition on which the value is based.

In order to present an approximate though relative table for quick reference, we have taken the low heat value of an average fuel in each classification, based on the loss in hydrogen combustion, and listed this as a percentage of high heat value. The available heat value is specifically that which remains after the sensible heat in the products of combustion below 1650 deg. F. has been subtracted. It is expressed as percentage of low heat value for best comparison purposes.

For quicker computation, the approximate available heat values are listed in millions of B.t.u. per unit of fuel as commonly sold. For comparison purposes, with bituminous coal as the standard and a $5 per ton delivered to the plant, the next two columns show that comparison in both percentage and equivalent cost bases. It can be seen at once what percentage cost factor must be applied to obtain an equivalent value of heat for one's fuel dollar.

Kiln Efficiencies The next section of the table is divided into sections represented by 40, 60, 80, and 100 per cent. kiln efficiency, based as previously indicated, on the practical minimum heat necessary to calcine stone to lime in a burning system made up of a stone recuperating heater, a calciner and heater, and heat from lime recuperator, each unit exchanging only the necessary heat units without regard to excess heat available in waste gases or other heat losses. On

this basis, efficiency could be made to approach 100 per cent. and is, therefore, termed practical efficiency, not overall efficiency.

Under each efficiency bracket is shown the number or fraction of units necessary per ton of lime, and also the tons of lime burned per unit. The third column under each efficiency group represent an approximate cost value that must be added to each fuel used. This value is computed from the depreciation, extra labor, repair, and power charges that must be made in equipment and operation to make the fuel available to the kiln used.

Fixed Charges The fixed charges to be added to the fuel cost are on a cost per ton of lime burned basis. As pointed out earlier, kiln capacity and efficiency affect the fuel cost. Values for four different efficiencies are given, all on a basis of 100 tons of lime per day. These values are shown for either central producer or direct-fired mill application, with the producer installation applied to two or three shaft kilns being figured as 10 cents per ton for lime higher than when applied to a single rotary. Investments are based on $50,000 for a producer installation for lignite, coal, or wood; $30,000 for direct mill firing for a rotary 100-ton kiln; $12,000 for an oil burning installation; $2,000 for natural gas; and $50,000 for a chain-grate coking unit for coal gas to kiln and by-product coal. Depreciation was taken as 10 per cent., power at 1½ cents per kilowatt hour, labor at 80 cents per hour, 300 days. Installation would be fairly automatic and well mechanized. Labor is to some degree absorbed by kiln-firing labor only partly charged to mill or producer operation.

Heat Cost In studying the table, it becomes at once apparent that the cost of heat introduced to the kiln represents a wide range, depending on the fuel employed, and that the cost in cents per million B.t.u. of total heat value of fuel is still a very poor criterion for evaluating and deriving the ultimate cost of fuel per ton of lime burned. Approximate though these given values may be, they, nevertheless show what factors must be applied.

Use of Lime (from page 73)

water. Safe disposal of waste waters is a very urgent need. In this field, each member of the lime industry might appoint himself an ambassador of good health, visiting city officials, industrial plant managers, and others interested in safe water supplies and presenting the advantages and needs for water treating. It is not only good citizenship, but will help to develop sound business which is sorely needed now that the war-time demand for lime has slackened. This is truly creative selling for, above all, service comes first and the product—lime—is incidental, but an ultimate end-result and we are interested in lime sales. Let "Lime Will Light the Way" be the slogan for the industry's bid for post-war development in this field.

At Fremont, Ohio, construction has begun on a $50,000 addition at the Wahl Refractory Products Company, producers of refractory cement and bonding mortar.

Kiln Efficiencies and Costs for Different Fuels

Practical Net Heat Transfer Efficiency									40%				60%				80%				100%			
Million B.t.u. per Ton of Lime									5.7				3.8				2.9				2.3			
Equivalent Cost/Ton Lime—B.t.u. Coal $5/Ton									$1.63				$1.11				$0.83				$0.66			
Fuel	Producer or Direct	Shaft Kiln or Rotary	Fuel Units as Sold	Appr. Low Btu. % High Btu.	Appr. Available Kiln Heat % of Low Heat Value	Appr. Available Heat Million Btu. per Unit	% of Available Heat Bitum. Coal = 100%	Equiv. Cost per Avail. Heat Bit. Coal @ $5 per Ton	Fuel Units per Ton Lime	Tons Lime per 1-Unit Fuel Ratio	Add for Deprec., Labor Power Repair $/Ton Lime	Total $/Ton Lime Equiv. Bit. Coal $5/Ton	Fuel Units per Ton Lime	Tons Lime per 1-Unit Fuel Ratio	Add for Deprec., Labor Power Repair $/Ton Lime	Total $/Ton Lime Equiv. Bit. Coal $5 /Ton	Fuel Units per Ton Lime	Tons Lime per 1-Unit Fuel Ratio	Add for Deprec., Labor Power Repair $/Ton Lime	Total $/Ton Lime Equiv. Bit. Coal $5/Ton	Fuel Units per Ton Lime	Tons Lime per 1-Unit Fuel Ratio	Add for Deprec., Labor Power Repair $/Ton Lime	Total $/Ton Lime Equiv. Bit. Coal $5/Ton
Lignite	P	R	Tons	5%	69%	9.7Btu.	55.4%	$2.77	0.59	1.7	$0.57	$2.20	0.40	2.5	$0.38	$1.49	0.30	3.3	$0.29	$1.12	0.24	4.2	$0.23	$0.89
	P	S	Tons	5	69	9.7	55.4	2.77	0.59	1.7	0.67	2.30	0.40	2.5	0.48	1.59	0.30	3.3	0.39	1.22	0.24	4.2	0.33	0.99
Sub. Bit. Coal	P	R	Tons	3	68	13.6	77.7	3.88	0.42	2.4	0.42	2.05	0.28	3.6	0.28	1.39	0.21	4.7	0.21	1.04	0.17	5.9	0.17	0.83
	P	S	Tons	3	68	13.6	77.7	3.88	0.42	2.4	0.52	2.15	0.28	3.6	0.38	1.49	0.21	4.7	0.31	1.14	0.17	5.9	0.27	0.93
Bit. Coal	D	R	Tons	3	65	17.5	100.0	5.00	0.32	3.1	0.22	1.85	0.22	4.6	0.15	1.26	0.17	6.0	0.11	0.94	0.13	7.6	0.09	0.75
	P	S	Tons	3	65	17.5	100.0	5.00	0.32	3.1	0.42	2.05	0.22	4.6	0.31	1.42	0.17	6.0	0.25	1.19	0.13	7.6	0.23	0.89
Coal-Coke	D	R	Tons	0	65	16.8	96.0	4.80	0.34	2.9	.....	.....	0.23	4.4	.....	.....	0.18	5.8	.....	.....	0.14	7.3	.....	.....
	P	S	Tons	0	65	16.8	96.0	4.80	0.34	2.9	0.52	2.15	0.23	4.4	0.38	1.49	0.18	5.8	0.31	1.14	0.14	7.3	0.27	0.93
Coal Gas Coke Excluded	P	R	Per Ton	13	23	8.2	47.0	2.35	0.71	1.4	0.65	2.28	0.45	2.2	0.44	1.55	0.36	2.8	0.32	1.15	0.28	3.6	0.26	0.92
	P	S	Coal	13	23	8.2	47.0	2.35	0.71	1.4	0.75	2.38	0.45	2.2	0.54	1.65	0.36	2.8	0.42	1.25	0.28	3.6	0.36	1.02
Cut Wood 30% Moisture	P	R	Cord	10	55	8.8	50.2	2.51	0.62	1.6	0.60	2.23	0.43	2.3	0.40	1.51	0.33	3.0	0.30	1.13	0.26	3.8	0.24	0.90
	P	S	Cord	10	55	8.8	50.2	2.51	0.62	1.6	0.70	2.33	0.43	2.3	0.50	1.61	0.33	3.0	0.40	1.23	0.26	3.8	0.31	1.00
Hogged Fuel 30% Moisture	P	R	Unit	10	55	10.7	61.1	3.05	0.52	1.9	0.49	2.12	0.36	2.8	0.32	1.43	0.27	3.7	0.24	1.07	0.21	4.7	0.19	0.85
	P	S	200Cu.Ft.	10	55	10.7	61.1	3.05	0.52	1.9	0.59	2.22	0.36	2.8	0.42	1.53	0.27	3.7	0.34	1.17	0.21	4.7	0.29	0.95
Fuel Oil	D	R	Bbl.	7	63	3.7	21.1	1.05	1.40	0.7	0.39	2.02	1.00	1.0	0.26	1.37	0.77	1.3	0.20	1.03	0.62	1.6	0.16	0.82
	P	S	Bbl.	7	63	3.7	21.1	1.05	1.40	0.7	0.39	2.02	1.00	1.0	0.26	1.37	0.77	1.3	0.20	1.03	0.62	1.6	0.16	0.82
Natural Gas	D	R	1000	10	62	0.56	3.2	0.16	10.00	0.10	0.03	1.66	6.70	0.15	0.03	1.14	5.30	0.19	0.02	0.85	4.10	0.24	0.02	0.68
	D	S	Cu. Ft.	10	62	0.56	3.2	0.16	10.00	0.10	0.04	1.67	6.70	0.15	0.04	1.15	5.30	0.19	0.03	0.86	4.15	0.24	0.03	0.69
Oil Coke	D	R	Tons	1	65	20.4	116.0	5.80	0.28	3.6	0.20	1.83	0.18	5.4	0.13	1.24	0.14	7.0	0.10	0.93	0.11	8.9	0.08	0.74
Pitch	D	R	Tons	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note: Cost to convert fuel to heat in kilns on basis of: 100 Tons Lime per day—Depreciation 10%, Power 1½c/KWH, Labor 80c/H., 300 days. Producer $50,000, Coal Mill $30,000 Oil $12,000.

PERSONAL MENTION

F. Kennard

FRANK KENNARD, former secretary-treasurer of the Kennard Glass Paint Company, has been appointed sales manager of the Crushed Stone Division of the Carney Company of Mankato, Minnesota. Although joining the Cement Division of the Carney Company in 1935, Mr. Kennard was employed during the war as technical representative with the Allison Division of General Motors.

R. B. YOUNG, a past president of the American Concrete Institute, and currently active in the work of the American Society for Testing Materials, has been named assistant director of research with the Hydro-Electric Power Commission of Ontario.

CARL F. CLAUSEN has resigned as chief of the nonmetallics section of the Building Materials Division, War Production Board, to re-enter the cement industry. He will be succeeded by C. A. WILLSON, former head of the clay and concrete products section, which was recently merged with the nonmetallics section. Mr. Clausen had been associated with F. L. Smidth & Company of New York before he began his service with the W.P.B. in 1941 as a consultant on Portland cement.

R. V. NUGENT recently accepted a position with the Ste. Genevieve Lime Company of Ste. Genevieve, Missouri, to head the firm's personnel and safety departments. Mr. Nugent was formerly personnel manager of the Atlas Imperial Diesel Engine Company of Mattoon, Illinois.

E. L. Shoemaker

E. L. SHOEMAKER, formerly Lieutenant Colonel in the U.S. Army Engineers Corps, has returned to the Warner Company of Philadelphia to take over from Irving Warner the plans for the company's plant improvements.

During his two and a half years in the Army, Mr. Shoemaker was chief of the engineering and development section of the Military Supply Division, the North Atlantic Division Engineers Office.

HORACE L. WOODLAND has been appointed superintendent of the McCoy plant of Warner Company of Philadelphia, to succeed John E. Kelley, who died recently. Mr. Woodland has been associated with the firm since 1915.

DAVID G. SAMUEL and L. E. HETRICK were recently appointed to positions at the Wolverine Portland Cement Companys' plant at Quincy, Michigan. Mr. Samuel, formerly associated with the Bethlehem Steel Corporation, has been made plant engineer; and Mr. Hetrick, who has been connected with well-known cement firms in the United States and Mexico, is chief chemist.

R. C. RIED, formerly associated with the Valley Forge Cement Company of Catasauqua, Pennsylvania, has been appointed district manager of the General American Process Equipment Company, with headquarters in Louisville, Kentucky.

PAUL M. TYLER, formerly with the U. S. Bureau of Mines and more recently engaged in special work for the American Mining Congress, has gone to London as European representative of the Foreign Economics Administration, with particular reference to the operations of the Technical Industrial Intelligence Committee on metals and minerals.

FORD J. TWAITS, proprietor of a well-known construction firm in Los Angeles and former president of the Consolidated Rock Products Company, has announced his retirement from business. The company has recently built or participated in many wartime projects throughout the West. Mr. Twaits was president of the southern California chapter of Associated General Contractors of America in 1943 and was for several years executive vice-president of the Consolidated Steel Corporation of Los Angeles.

ERIC JOHNSTON, president of the Washington Brick & Lime Company of Spokane, Washington, was recently appointed head of the Motion Picture Producers and Distributors of America, to succeed Will Hays, who resigned. Mr. Johnston is also president of the United States Chamber of Commerce.

HERBERT A. SNOW, president of the Portland Cement Company of Utah, has been elected president of the Utah Foundation, which was formed recently to make a thorough study of Utah's tax structure.

EDMUND C. (NED) POWERS, manager of lime sales for the Marble Cliff Quarries Company, has retired after nearly 30 years' service with the company.

Mr. Powers, who joined the company in 1916, was in charge of the burned lime manufacturing plant of the company, which he supervised when it was erected in 1923. He has been succeeded by Charles E. Rarey.

MR. AND MRS. FRANK RUPRECHT of Carondelet, Missouri, celebrated their 60th wedding anniversary at their home on October 6. Mr. Ruprecht is one of the founders of the William & F. Ruprecht Materials Company, organized in 1885. In 1928 he founded the Frank Ruprecht & Sons Quarry & Materials Company, from which he retired in 1940.

T. P. KUYKENDALL, former Louisville Cement Company representative in southern Indiana, will be in charge of the firm's program for promoting sales of crushed stone and agricultural limestone.

V. E. WESSELS, formerly associated with the Missouri Portland Cement Company, as a chemical engineer, has accepted a similar position with the Petoskey Portland Cement Company of Petoskey, Michigan.

WALLACE A. MARSH was recently named assistant general manager of the Permanente Cement Company of Oakland, California. Mr. Marsh previously had been chief chemist at Permanente. Promotions also went to the following: J. K. BEATTY, general sales manager; JACK JANSSE, northern California sales manager; and F. T. MCDONOUGH, southern California sales manager.

WILLIAM ROSE has been made purchasing agent of the Consolidated Rock Products Company, Los Angeles, to succeed George Rollnick, who resigned after 15 years' service with Consolidated to go into business for himself.

HARLEY C. LEE, formerly in charge of the technical department of Basic Magnesium, has rejoined Basic Refractories as vice-president and technical director.

M. J. MCMILLAN, former manager of the Washington office of the Portland Cement Association since 1936, recently became regional manager of the Association's Eastern offices at 347 Madison Avenue, New York City.

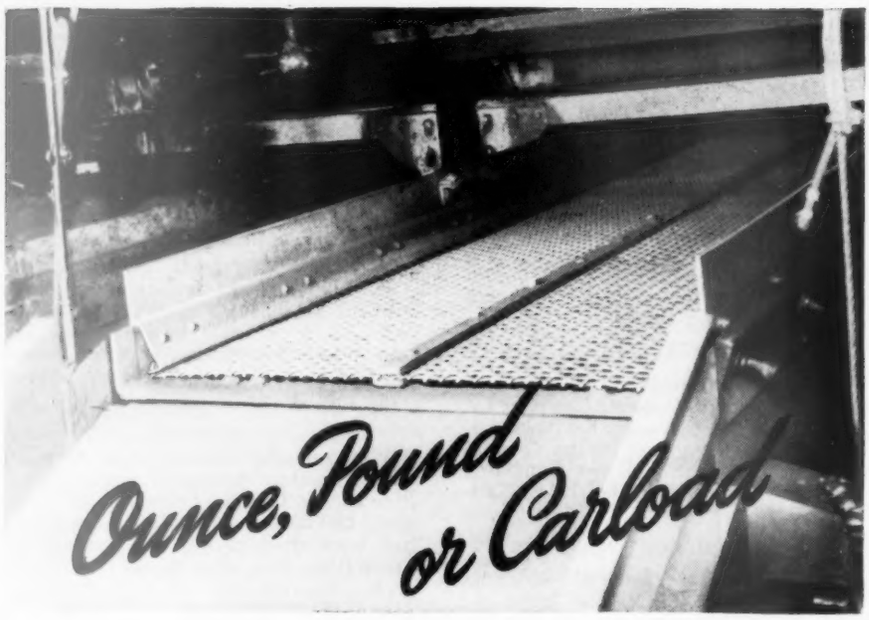
R. L. ROBINSON has been named sales manager for the Aggregates Division of Pacific Coast Aggregates, Inc., with headquarters in San Francisco. Other appointments reported were as follows: J. J. Penrose, assistant sales manager at Sacramento; E. R. Muzio, assistant sales manager at Stockton.

JOSEPH H. CONZELMAN, former vice-president of the Alabama Asphaltic Limestone Company of Birmingham, Alabama, recently became president of the firm, succeeding W. L. Caldwell, who died last spring.

HARRY W. GLEICHERT has been appointed director of sales for the Columbia Chemical Division of the Pittsburgh Plate Glass Company of Pittsburgh. Mr. Gleichert became associated with the company in 1920. In 1937 he was made assistant director of sales. Mr. Gleichert will be located in Pittsburgh.

HENRY S. MCKAY has taken charge of the development and operation of the Mad River Talc Corporation's property near Moretown, Vermont.

G. L. HOCKENSMITH has been named director of the War Production Board's newly organized Construction Bureau, to succeed J. L. Haynes.



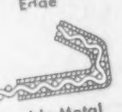
ROEBLING VIBRATOR AND SHAKER SCREENS

FOUR DIFFERENT FORMED EDGES

Turned Edge

Metal Reinforced Edge

Double Metal Reinforced Edge


Square Bar

IN EVERY TYPE of vibrator or shaker operation, Roebling Wire Screens are made to fit your requirements—exactly.

Uniform mesh sizes and overall screen dimensions are maintained during light, intermittent operations or under the severe pounding of continuous use. This stability results in more accurate sizing control and reduced shutdown time for repair or replacement.

Roebling Wire Screens represent more than a century of experience in the manufacture of fine wire products. They are scientifically designed for longer wear, better service and greater efficiency.

Try Roebling for your next wire screen job. Our engineers will be glad to assist you.

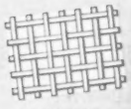
Woven Wire Fabrics Division
JOHN A. ROEBLING'S SONS COMPANY
TRENTON 2, NEW JERSEY
Branches and Warehouses in Principal Cities

FROM FINEST FILTER CLOTH TO COARSEST SCREEN!

Dutch Plain Weave

"Jersey" Stranded

Rectangular Mesh


Square Mesh

ROEBLING

PACEMAKER IN WIRE PRODUCTS

WIRE ROPE AND STRAND • FITTINGS • SLINGS • SUSPENSION BRIDGES AND CABLES
COLD ROLLED STRIP • HIGH AND LOW CARBON ACID AND BASIC OPEN HEARTH STEELS
AIRCORD, SWAGED TERMINALS AND ASSEMBLIES • AERIAL WIRE ROPE SYSTEMS • ROUND
AND SHAPED WIRE • ELECTRICAL WIRES AND CABLES • WIRE CLOTH AND NETTING

F. V. J. HAGGERTY, recently returned World War II veteran of 28 months in the service, has been appointed sales manager of the Wilmington Division of the Warner Company. He succeeds the late John C. Newnam.

PERRY N. TAYLOR, former superintendent of the High Peak Mine, has become mine superintendent of the Blue Diamond Corporation of Blue Diamond, Nevada.

GEORGE K. FOSTER, former chief engineer of the mines division of Canadian Johns-Manville Company, Ltd., Quebec, was recently made vice-president and mine manager. His successor is CHARLES BORRAR.

JACK PALMATIER has been elected general manager of the Grand Rapids Gravel Company of Grand Rapids, Michigan, to succeed the late Henry N. Battjes. Mr. Palmatier was formerly vice-president of the Antrim Iron Company.

TIP BROWN, Lehigh Portland Cement Company district sales manager at Kansas City, Missouri, recently was made a director of the Missouri Chamber of Commerce.

EARL PFLASTERER recently assumed his duties as permanent superintendent of the Columbia Quarry Company's branch plant near Elsberry, Missouri. Mr. Pflasterer had previously served the company as its construction engineer.

LEW PARSONS, publisher of the *Rocky Mountain Contractor,* was elected president of the newly-organized Colorado Good Roads Association at a meeting in Denver.

ALEXANDER N. WINCHELL, who became emeritus professor of geology at the University of Wisconsin last year, is now resident consultant for the American Cyanamid Company at Stamford, Connecticut.

OBITUARY

HOMER K. SHERRY, 57, vice-president of the Canadian Johns-Manville Company, Limited, and until recently general manager of the Asbestos Mines, Asbestos, Quebec, died recently after a prolonged illness. Mr. Sherry joined the staff of Canadian Johns-Manville in 1919 as a mining engineer, became mine superintendent and later general manager of the Mines Division.

FRANK C. PECK, 87, chairman of the Peck-Woolf Sand & Material Company, Kansas City, Missouri, died on November 17 in that city. He had retired from active participation in the business in 1935, and had been in ill health for the last two years.

Mr. Peck was for several years assistant to the general manager of the Kansas City Cable Car Company, after which he and Henry P. Stewart organ-

ized the Stewart-Peck Sand Company. He subsequently organized the General Construction Company and in 1914 he formed the firm of Frank C. Peck & Son. From 1926 until his death, Mr. Peck was board chairman of the Peck-Woolf Sand & Material Company, which was organized in 1917.

JOHN C. NEWNAM, sales manager of the Wilmington Division, Warner Company, died unexpectedly in Philadelphia after surgery. He had been affiliated with the firm for 23 years.

G. ERLE WILLIAMSON, 71, owner and manager of the Tulsa Sand Company of Tulsa, Oklahoma, died on November 19 in a hospital of that city. A pioneer among coal field developers of Oklahoma, Mr. Williamson was active in the industry until 1926, after which he became affiliated with the Tulsa Sand Company.

THOMAS M. PEIRCE, JR., 67, secretary-treasurer of the Hercules Cement Corporation of Philadelphia, who was also prominent as a business-training school executive, died on November 2 in that city.

JUDGE EDGAR WATKINS, for many years counsel for Southeastern lime interests, died at his home in Atlanta, Georgia, on August 21. His experience while associated with the Interstate Commerce Commission and other government groups made his advice valuable on freight rates, trade practices and regulations governing wartime agencies.

MAURICE C. O'BRIEN, 51, vice-president of Material Service Corporation of Chicago, died on November 28 of a heart ailment. Mr. O'Brien had been associated with Material Service for more than 25 years.

JOHN A. F. WENDT, 51, sales manager for the United States Gypsum Company, succumbed to a heart attack October 19, in an Evanston, Illinois, hospital.

HOWARD A. KELLER, 57, division engineer for the Ohio State Highway Department. was killed in a railroad crossing accident on September 14.

PAUL LEGAVRIAN, Secretary General of the Permanent Association of International Road Congresses, Paris, died recently at Versailles, France. He attended the World Congress in Washington in 1930, and organized road congresses in the United States and other countries.

EVAN JOHN ROBERTS, 79, retired quarry superintendent for the Stephens-Jackson Company of Pen Argyl, Pennsylvania, succumbed to a prolonged illness recently at Pen Argyl.

SILAS M. STANDISH, manager of a crushed stone business in Salem, Indiana, for many years, died at his home on November 2 at the age of 71 years.

for their lasting performance

● The seal that keeps the water in and the air out consists of two wearing surface seal rings made of Tungsten Carbide and a grease container. One seal ring rotates on the shaft and is held in contact with the stationary ring by a stainless steel spring. This method of sealing is specially suited for high pressure work and when handling dirty water—the higher the pressure the tighter the seal. Dirty water cannot get into the grease and damage the shaft and bearings. Air is kept out of the pump so there's no loss of vacuum and high priming efficiency is maintained.

For details, see your local Carver distributor or write direct.

THE CARVER PUMP CO., Muscatine, Iowa

CARVER CENTRIFUGAL Certified PUMPS

Legal Decisions

By LEO T. PARKER

Injured in Truck

Considerable discussion has arisen from time to time over the legal question: Under what circumstances may an employee recover compensation when injured while riding to his place of work?

According to a late higher court an employee can recover compensation if injured on a *private* road, although not riding in a vehicle owned by his employer. In *Johnson v. Bederman,* 149 Fed. (2d) 515, reported August, 1945, it was shown that a contractor's employee was riding in a "share-the-ride" automobile from the employer's time office to the site where he was expected to work. The automobile was wrecked and the employee was injured. He sued to recover compensation from his employer.

During the trial testimony was given that the accident happened on a *public* highway. In view of this testimony the higher court held that the injuries did not "arise out of the employment" and hence were not covered by the State Workmen's Compensation Act. This court said:

"On the peculiar facts of this case, we think the injuries sustained by the plaintiff (employee) did not arise out of his employment by the defendant (contractor)."

On the other hand, see the leading case of *Employers' Liability v. Light,* 275 S. W. 685, 687. In that case the employer had leased a granite quarry located in a pasture field a little over a mile off the public highway. Access to this quarry was had over a private road leading to the quarry from the public highway. One day an employee had worked at the quarry until noon when rain prevented further work and he started to return home, riding on a truck owned by *another* employee. While on the private road between the quarry and the public highway, he slipped from the truck and was killed. In that case the court held the injury was sustained in the course of employment. The court said:

". . . In the instant case the road on which Light was killed was in no sense a public road. It was a private passage over private property, not only necessary to the Dealers' Granite Corporation in the conduct of its business, but the only route over which such corporation could gain access to its quarry or remove granite therefrom, and the only route over which Light could, or had any right to, travel in order to reach his place of employment, or return therefrom to his home. . . ."

In still another case, *Kirby Company v. Scurlock,* 246 S. W. 76, it was shown that an employee was killed while on his way home riding his velocipede upon the tramroad track. A train on the tracks overtook him, ran over him, and killed him. The court held his death was sustained in the course of his employment. The court said:

". . . In either event, the place where he was injured was a part of the employer's premises, intended for his use as a means of going to and from his work."

Gravel Company Leases Trucks

If the owner of a motor truck leases it and its driver, the lessee is solely liable for injuries negligently caused by the driver provided the lessee has *full* control over the driver. However, if the truck owner retains the right to control and *discharge* the driver, he is solely liable for injuries.

In *Drake Gravel Company v. Hodges,* 161 Pac. (2d) 338, reported August, 1945, it was shown that drivers of motor trucks hauling gravel were racing. The driver of one truck pulled out of his line of traffic to his left to pass the truck ahead of him. Suddenly a passenger car appeared over the brow of a hill and a collison occurred seriously injuring the driver of the passenger automobile. The injured person sued the gravel company for damages. The gravel company attempted to avoid liability on the ground that it had leased its trucks and drivers to the state highway department. However, the evidence proved that, although this was true, the company officials could at any time discharge the drivers and also controlled the drivers. Moreover, the accident happened after the drivers had finished work for the day and were returning the trucks to the company's place of business. The higher court held the gravel company liable for $5,000 saying:

"The evidence shows that at the time of the accident, Decker (driver) had finished his work for the day, and was under duty to return the truck to the camp that night."

THEY ASK NO QUARTER

Plat-O Vibrating Screens "ask no quarter." They are built for the tough grading jobs . . . where the screen is under heavy load, hour after hour . . . where dependability is put to the continuous test.

Only two bearings (both oversize) are used and neither one supports the screen's weight. Oil lubrication (no grease) reaches every moving part and surface, permitting operation at higher speeds with less heat. Framework and sides are of heavy steel and are all-welded. The same goes for every other feature . . . each is designed and constructed for hard usage, day in and day out.

That's why—*for better sizing, cheaper*—more and more operators are specifying Plat-O Screens. For your operations, there's a complete line to choose from: one, two, three and four-deck models ranging in size (actual screening area) from 2½'x4' to 5'x12'.

DEISTER MACHINE COMPANY
Fort Wayne 4, Indiana

PLAT-O by DEISTER

Labor Dispute

According to a late higher court decision unseasonal closing of a plant may be a violation of the National Labor Relations Act. For instance, in *National Labor Relations Board v. Cowell Cement Company,* 148 Fed. (2d) 237, reported May, 1945, the seasonal shutdown of the plant usually began July 31. However, the shutdown commenced on July 16 and continued until October 1. The company's officials claimed that this was a seasonal shutdown, necessitated by business conditions, and was lawful. The National Labor Relations Board charged that the company had engaged in and was engaging in unfair labor practices because it shutdown its plant on July 16, as a part of an unlawful attempt to compel its employees to become members of Local 21074 and to renounce their membership in Local 356. The higher court affirmed the board's verdict, and said:

"These findings are supported by substantial evidence and hence are conclusive."

Government Changes Mind

All persons, especially contractors, should beware of contracts made on the basis of government, state, county or municipal contracts. While any contractor usually is liable in damages for breaching his contract, yet if the breach is a direct result of the government, state or city breaching its contract, modern courts are not in favor of allowing damages to either the principal or the subcontractor.

For example, in *Blair v. United States,* 150 Fed. (2d) 676, reported October, 1945, a subcontractor sued a contractor, who had a contract with the government, for damages for breach of contract. The subcontractor sought to recover his expenses incurred in shipping a large asphalt plant to the place of performing the work, in installing and equipping the plant for the production of 50,000 tons of asphalt and in dismantling and returning the plant to the point from which it was shipped.

The subcontractor based his suit on a contract made with the government contractor. The large plant was necessary for the subcontractor to complete the contract. The testimony proved that the contract was executed on September 20. Within a very few days after its execution the subcontractor learned that the government had decided to reduce the amount of asphalt required under the contract. In view of this testimony the higher court refused to allow the subcontractor damages.

Another phase of this litigation involved several thousand dollars damages which the subcontractor sought to recover from the government contractor for expenses in opening up a new gravel pit. The government contractor believed that the government would allow additional expenses for opening the gravel pit and wrote the subcontractor, as follows: "I am enclosing herewith original and yellow copy of my formal order increasing your contract price in the sum of $9,709.94, said amount being that allowed your firm to cover additional gravel pit."

Soon afterward the government officials decided *not* to increase the government contractor's allowance and the latter cancelled its agreement to pay the subcontractor an additional $9,709.94, although the subcontractor incurred heavy expenses in opening a new pit.

The higher court refused to hold the government contractor liable in damages

It Doesn't Take Long to Change Tips on These Pulverizer Hammers . . .

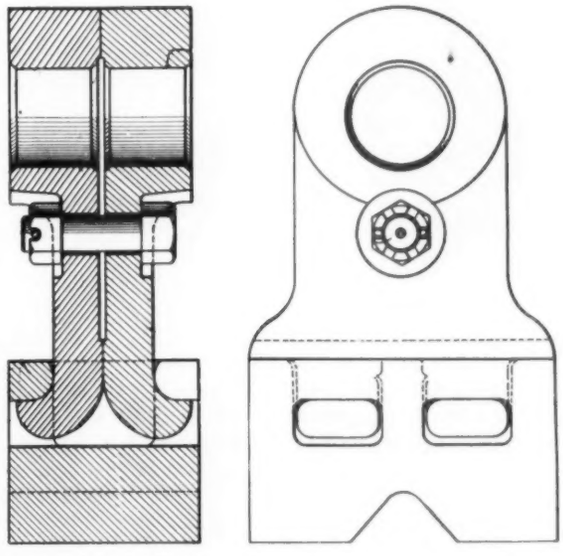
In the Amsco-Clark renewable-reversible tip pulverizer hammer, the time consumed in reversing tips or removing old and applying new tips is negligible. After removing the worn hammers from the rotor arbor, all that need be done is to remove the bolt that holds the two-piece shank together, spread the shank apart and the renewable tip comes off. A new tip is easily installed by reversing this procedure.

Reversing a tip end for end can be accomplished with equal ease. The reversible tip feature of Amsco-Clark pulverizer hammers affords double wear life. About 75% of the tip metal can be used before replacement is necessary, while the duplex shank will outlast many tips. Apertures in the sides of the tips reveal how much wear has taken place so that tips can be reversed or replaced before the shank is exposed to wear.

The tips and shanks are made of austenitic manganese steel, which work-hardens under repeated impact, developing a wear resistance which no other metal can equal in severe service, while at the same time retaining its body toughness to withstand shocks and stresses.

The advanced design of Amsco-Clark hammers also includes an assembly in which the tip cannot work or wear loose from the shank as long as the latter is on the supporting rod. There is no operating strain on the bolt which holds the two part shank together; and the same size tip can be used on longer or shorter shanks.

Please give us the pulverizer make and pattern number on your present hammers when inquiring for prices.



These drawings reproduced from patent application show how easily the Amsco-Clark hammer is assembled and taken apart.

How Renewable Lip on Amsco Dippers Saves Time Is Told in Bulletin 641-D

Amsco
AMERICAN MANGANESE STEEL DIVISION
Chicago Heights, Illinois
FOUNDRIES AT CHICAGO HEIGHTS, ILL.; NEW CASTLE, DEL.; DENVER, COLO.; OAKLAND, CALIF.; LOS ANGELES, CALIF.; ST. LOUIS, MO.
OFFICES IN PRINCIPAL CITIES

AMERICAN Brake Shoe COMPANY

for breaching the contract or agreement made in his letter. This court said:

"The evidence discloses that the letter and formal order mentioned were written by defendant (government contractor) on the faith of a preliminary allowance by the government of the claim for the expense of providing the gravel pit, and that subsequently the government reversed its position and declined to pay the claim. We think it clear that the letter relied on falls far short, in view of the undisputed evidence concerning it, of establishing an absolute agreement on the part of defendant to pay for the cost of opening the gravel pit."

Sales to Municipalities

Few persons realize the "risk" involved when selling materials to municipalities. It is certain that sellers who fail to *strictly* comply with valid laws can not collect for materials thus sold.

For illustration, in *Builders Company v. City of Helena*, 154 Pac. (2d) 270, reported March, 1945, it was shown that a state law provides that all supplies, merchandise and equipment bought for use by municipalities must be purchased by competitive bidding. The mayor and the city engineer decided that it was advisable to replace 12,000 to 18,000 feet of the asbestos water-pipe line. Without obtaining bids from various sellers of pipe, the mayor arranged with a company to supply cement asbestos pipe for the entire project. Later the seller of this pipe was compelled to sue the city to recover the amount due because the city officials refused to pay for the pipe. The higher court held the city *not* liable for payment.

You've looked far enough HARDINGE BUILDS IT!

Check your requirements NOW . . .

AGITATORS	☐	MILLS, BATCH	☐
CLARIFIERS	☐	MILLS, CONICAL BALL	☐
CLASSIFIERS, AIR	☐	MILLS, CONICAL PEBBLE	☐
CLASSIFIERS, COUNTER-CURRENT	☐	MILLS, ROD	☐
CLASSIFIERS, HYDRO	☐	MILLS, TUBE	☐
DENSITY STABILIZER	☐	MIXERS, SLURRY	☐
DIGESTERS	☐	OPERATING DATA	☐
DRYERS	☐	OPERATING NOTES FOR BALL MILL USERS	☐
"ELECTRIC EAR"	☐	PUMPS, DIAPHRAGM	☐
FEEDERS, BELT	☐	RUGGLES-COLES DRYERS, KILNS AND COOLERS	☐
FEEDERS, CONSTANT WEIGHT	☐	SCRUBBERS, CONICAL	☐
FEEDERS, DISC	☐	"THERMOMILL"	☐
FEEDERS, DRUM	☐	HARDINGE PRODUCTS (brief description of all equipment)	☐
FEEDERS, NON FLOODING	☐		
FEEDERS, WEIGHT RECORDING	☐	POLLUTION REMOVAL AND BY PRODUCT RECOVERY EQUIPMENT	☐
FILTERS, SAND	☐		
METAL RECLAMATION	☐		

Hardinge Company, Inc., York, Pa.

Gentlemen:

Please forward the bulletins indicated.

I would ☐ would not ☐ like your nearest sales engineer to call.

NAME .....

COMPANY .....

ADDRESS .....

HR12

Taxes on Interstate Business

Considerable discussion has arisen from time to time over the legal question: Must a corporation, which transacts interstate business in a foreign state, pay unemployment taxes on its salesmen and other employees who work in this foreign state? A recent higher court held in the affirmative. This is an unusual decision because, according to the United States Constitution, no state may tax interstate business.

For example, in *International v. State*, 154 Pac. (2d) 801, reported March, 1945, it was shown that a corporation has its principal place of business in Missouri, and employs salesmen who reside in the State of Washington. These salesmen solicit orders from purchasers in Washington.

The corporation paid no taxes or contributions on these salesmen or employees to the State of Washington under the Unemployment Compensation Act. The state authorities sued the corporation whose counsel contended that the corporation is not engaged in "doing business" within the state. However, the higher court held that the corporation must pay unemployment contributions to the State of Washington. The higher court said:

"We are of the opinion the unemployment compensation act does not impose a burden upon interstate commerce, in so far as the business of appellant (corporation) is concerned."

Also, see the leading case of *Frene v. Louisville Cement Company*, 77 U. S. App. D.C., 134 F. (2d) 511, 512, 146 A.L.R. 926, where a company took contracts to perform construction work in a foreign state. The company's employees frequently visited jobs in the course of construction where its products were used. On these occasions the employee would note the manner in which the products were being installed, and if any difficulties were being experienced, he would make suggestions as to how to overcome them.

The court held that these agents or employees transacted *intrastate* and not interstate business in this foreign state and, therefore, were subject to all the laws of the state, although the sales of materials involved strictly interstate business.

Statute Broadly Construed

Generally speaking, the higher courts broadly and liberally construe state compensation laws to eliminate "the injustice, unreasonableness and inconvenience" to employees. See *Toffalori v. Donatelli Granite Company*, 43 Atl. (2d) 584, reported August, 1945, wherein it was shown that a workman applied for and was awarded compensation for total disability due to silicosis. There is no dispute about the facts. The employee was employed by Donatelli Granite Company, as a granite monument worker, from 1919 to December 23, 1939. On the latter date he became totally disabled as a result of exposure to silicon dioxide in the course of his employment. Later the employee died and his widow *sued* and *recovered* the difference between the amount the employee had been paid as compensation and the maximum compensation payable for disability and death resulting from silicosis, anthraco-silicosis, or asbestosis, which was specified by a state law to be $3,600.

Silica Hazard

Generally speaking, an employee who proves that he was exposed to a silica hazard may recover total disability benefits when he becomes unable to work. For example, in *Agostin v. Pittsburgh,* 43 Atl. (2d) 604, reported September, 1945, it was shown that an employee proved that he had been exposed to a silica hazard in his employment for more than eight years prior to January 20, 1938. After that date he was unable to work because of disability from silicosis. The higher court affirmed an award of compensation for total disability by the Workmen's Compensation Board.

State Law Construed

Generally speaking, the higher courts strictly contrue state laws which specify payment of compensation to employees who contract silicosis. For example, in *Willis,* 157 Pac. (2d) 800, reported June, 1945, the court interpreted a state law which provides that in case an employee contracts silicosis the employer in whose employment he was when he contracted the disease is liable for payment of compensation. The employee contracted silicosis June 7, 1943. After this date he was engaged in other work with another employer. In view of the above law the higher court held liable for payment of compensation the employer in whose employment the employee was on June 7, 1943.

Land Owner Frightened

It is well established law that an employer is liable in damages for unwarranted assault by his employees while acting within the scope of the employment. However, mere "fright" is not sufficient grounds to recover damages.

For example, in *Wedgworth v. City of Fort Worth,* 189 S. W. (2d) 40, reported July, 1945, the owner of land sued a city to recover for the wrongful taking of gravel from his land. Also, he sought $10,000 for damages resulting from "fright." He alleged that three men employed by the city approached him at a threatening pace, and their countenances showed grim determination during an argument over the gravel land. The higher court refused to hold the city liable, and said:

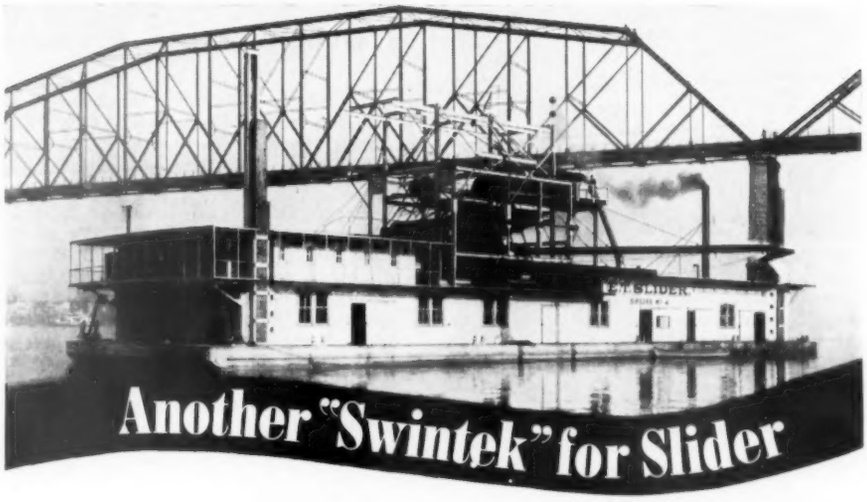
"We have found no case where a recovery has been allowed on facts similar or even analogous to those pleaded by appellant. There was no assault."

Telegraph Company Not Liable

According to a late higher-court decision a telegraph company is not liable in damages for error in a telegram, or failure to deliver a message, unless the claim is filed within 60 days from date the company accepted the telegram for transmission.

For example, in *Spann v. Western Union Telegraph Company,* 62 N. E. (2d) 576, reported September, 1945, the sender of a telegram sued the telegraph company for heavy damages for failure of the latter to deliver an important business message. The higher court refused to hold the company liable because the sender of the telegram failed to file a written claim for damages for failure within 60 days.

Also, see *Scott v. Postal Telegraph Company,* 45 Ohio App. 229, in which the court held that failure to file a claim within 60 days against a tele-

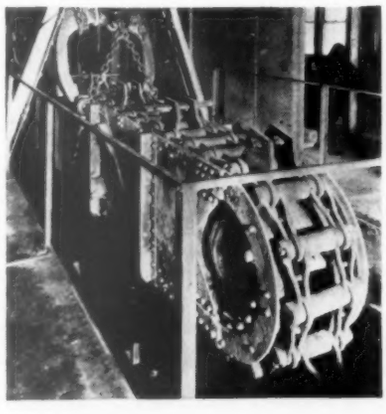


Another "Swintek" for Slider

Since 1930 E. T. Slider, Inc. has operated the 15" x 75" Eagle "Swintek" Dredging Ladder shown below on its Dredge No. 4. During these 15 years the "Swintek" has rendered profitable service under all conditions of Ohio River dredging. Mr. Slider wrote:

"The 'Swintek' increased our production about 30%, and is giving us continuous operation and an even flow of material at all times. We are passing about 700 tons per hour through our 15" pipe line. Fuel consumption is very low. Formerly we had difficulties due to boulders and penetrating hard pan. Now we find it an easy matter to go through 24" to 30" of hard pan, and the 'Swintek' takes out all boulders and other refuse."

Recently, when Slider Dredge No. 5 was modernized the Eagle "Swintek" Dredging Ladder pictured at the right was ordered. This unit, of the same size as the previous one, is equipped with side braces for additional strength against the "swells" of the Ohio, and to make possible traversing the ladder during dredging for more thorough cleaning up of deposits.



Eagle "Swintek" Dredging Ladders assure more profitable operation, allowing for deeper dredging, proper agitation of the deposit, exclusion of boulders and debris from the pipe line, and increased output of higher quality material.

Write for new catalog No. 745, which contains full information.

EAGLE IRON WORKS
133 Holcomb Ave.
Des Moines, Iowa

EAGLE ***Specialized Sand and Gravel Equipment***
"SWINTEK" DREDGE LADDERS — SCREW WASHERS
LOG WASHERS — DEHYDRATORS — SAND TANKS
CLASSIFIERS — REVOLVING SCREENS
EAGLE IRON WORKS
DES MOINES, IOWA
"SERVING INDUSTRY FOR OVER SEVENTY YEARS".

graph company for failure in delivery of a message bars the claim.

Books as Evidence

Modern higher courts consistently hold that properly kept books are available and acceptable as evidence in suits of all kinds filed against a company. For example, in *Menten v. Illinois Company*, 56 N. E. (2d) 480, reported May, 1945, it was shown that a pedestrian sued the company, contending that its motor truck had struck him. The counsel for the company produced at the trial books kept by the company in the usual course of business showing the times when its trucks left its garages and returned. This book showed that the truck alleged to have caused the injury was in the garage at the time of the accident. In view of this testimony the higher court held the company not liable.

Questions and Answers

[Mr. Parker will be glad to answer questions regarding legal problems of PIT AND QUARRY readers. Questions should be addressed to Leo T. Parker, Legal Editor, PIT AND QUARRY.—Ed.]

Legal Editor: In August I quoted three farmers a price of 15 cents per yard on the excavating of a drainage ditch. I contacted each of the farmers before I moved on the job with my machine. After moving on the job they wanted the work done at so much per rod, so I contacted the engineer and asked for an estimate on the yards per rod, and made the price per rod according to my original price of 15 cents per yard. The engineer was wrong on his estimate of the yards per rod and I have refused to complete the ditch at the price per rod. Am I liable for damages to the farmers or can I hope to collect for work I have completed?—S. N. L.

Answer: If the engineer represented the farmers you could have finished the jobs, and then sued the farmers and recovered the full price of 15 cents per yard.

However, if this engineer was not a representative of the farmers but merely one on whose judgment you relied, then it is doubtful that you can recover for the work you have done. In fact under the latter circumstances you may be liable to the farmers provided they can prove they sustained damages resulting from your failure to complete your contract on the rod basis.

Another point that may assist you is this: Can you prove that these farmers realized that your price per rod was considerably less than the price of 15 cents per yard you originally submitted to them? If so, this testimony will prove that the farmers had "implied" notice that your second bid was based upon "mistake" of the engineer. And under these circumstances you had a legal right to cancel the contract, when you discovered the mistake, and recover a reasonable sum for the work you performed before you discovered your mistake.

On the other hand, if the engineer did not represent the farmers who were ignorant of the facts and merely accepted your offer to do the work on the rod basis, it is my opinion that they can compel you to fulfill the terms of your contract. Impossibility to perform a contract, or mistake of judgment, will not relieve a person from fulfilling the terms of a contract.

Legal Editor: We hire trucks from the owners and their drivers on an hourly basis. If one of these truck drivers has an accident who is responsible?—L.G.C.

Answer: If you pay for the use of the trucks and drivers and merely designate the quantity of material to be hauled, the truck owner is solely responsible for the accidents. On the other hand, if you direct or control the truck drivers, then you are responsible as the *legal* employer although you do not pay the drivers' wages. Modern higher courts consistently hold that the one who has the authority to control the employees is the legal employer.

See *Blakkey v. Capanna Asphalt*, 36 Atl. (2d) 789, where it was shown that a truck owner contracted to furnish a truck and driver for hauling asphalt but he retained all control of the driver. In other words, the officials of the company for which the hauling was being done merely directed the truck owner where the truck was to go and what load it was to carry.

The driver of the truck collided with an automobile whose driver was killed. The higher court held the truck owner solely liable, and said:

"In the instant case, the truck owner . . . retained all power of direction as to the operation of the vehicle. The asphalt company was not in the business of hauling. The company had nothing to do with the operation of the truck, nor did it attempt to assume such control."

Legal Editor: We bought some "used" equipment. The written contract contains no guarantee, but the salesman verbally guaranteed it. We want to return this unsatisfactory equipment. Can we and get our money?—C.G.C.

"A RUGGED INDIVIDUALIST"

MARION STANDARD DUMP

That's what they say of the Marion "Standard Dump" in the pit and quarry field.

This standard heavy-duty body and hoist has been designed by Marion traveling engineers. These men get their facts from studies of actual work conditions right in the field. That is why the name MARION means "Built to Take It."

See Marion for complete line of standard or custom-built equipment. There's a Marion Body and Hoist for every hauling job.

See Your Local Distributor or Write
THE
MARION METAL PRODUCTS CO.
BODY and HOIST DIVISION, MARION, O.

Answer: You should have had the salesman sign a written contract or agreement. Now, you must prove to the court the verbal agreement, otherwise you can not win the suit. Under the circumstances you will do well not to go into expensive litigation.

Legal Editor: Recently one of our motor trucks killed a chicken which caused the driver of an automobile to run into a pole. Are we liable to the owner of the chicken, or to the injured automobile driver?—A.C.

Answer: Unless the driver of your truck was negligent you are not liable to either the injured automobile driver or the chicken owner. In *Garbarino Transfer Company, Inc.*, 20 So. (2d) 625, the owner of a truck was held liable for the value of the horse, which he killed because the jury held that this driver was negligent in striking the horse. In your case the jury will not hold you liable unless it decides that the collision with the chicken and, also, the automobile driver's collision with the pole were due to negligence on the part of your truck driver.

Legal Editor: Please advise whether a common carrier can make a valid contract to transport gravel at less than the rate fixed by tariffs?—J.T.W.

Answer: Modern higher courts consistently hold that the tariffs or schedule of rates established, published, and filed with the Interstate Commerce Commission is legal when determining whether a freight charge is reasonable and valid. Moreover, all higher courts now agree that freight rates filed with the Interstate Commerce Commission are the only rates or charges that can be legally collected for transportation services rendered.

For illustration, in *Howitt v. United States*, 150 Fed. (2d) 82, reported August, 1945, the higher court said that where a common carrier is subject to the Interstate Commerce Act, and its rates have been filed with the Interstate Commerce Commission, the rates specified are the only charges that can legally be exacted for the services rendered. Furthermore, although the carrier contracts to transport freight at lesser rates, such carrier may sue and recover the difference between the rates specified in the contract and the rates fixed by the traiffs.

Legal Editor: We ship sand and gravel outside our state. Must we pay state taxes?—A.C.

Answer: What state taxes do you mean? Generally speaking, a state can not tax interstate business.

In the case of *Commission*, 116 Pac. (2nd) 899, it was shown that a corporation shipped merchandise on consignment to a purchaser in another state. The higher court held that this transaction was intrastate business in the foreign state which resulted in the seller "doing business" and being liable for payment of taxes in this foreign state.

Also, see *American*, 192 U. S. 500, where the Supreme Court of the United States held that transactions are nontaxable in a foreign state where a seller ships merchandise to a company in the foreign state for distribution to purchasers therein.

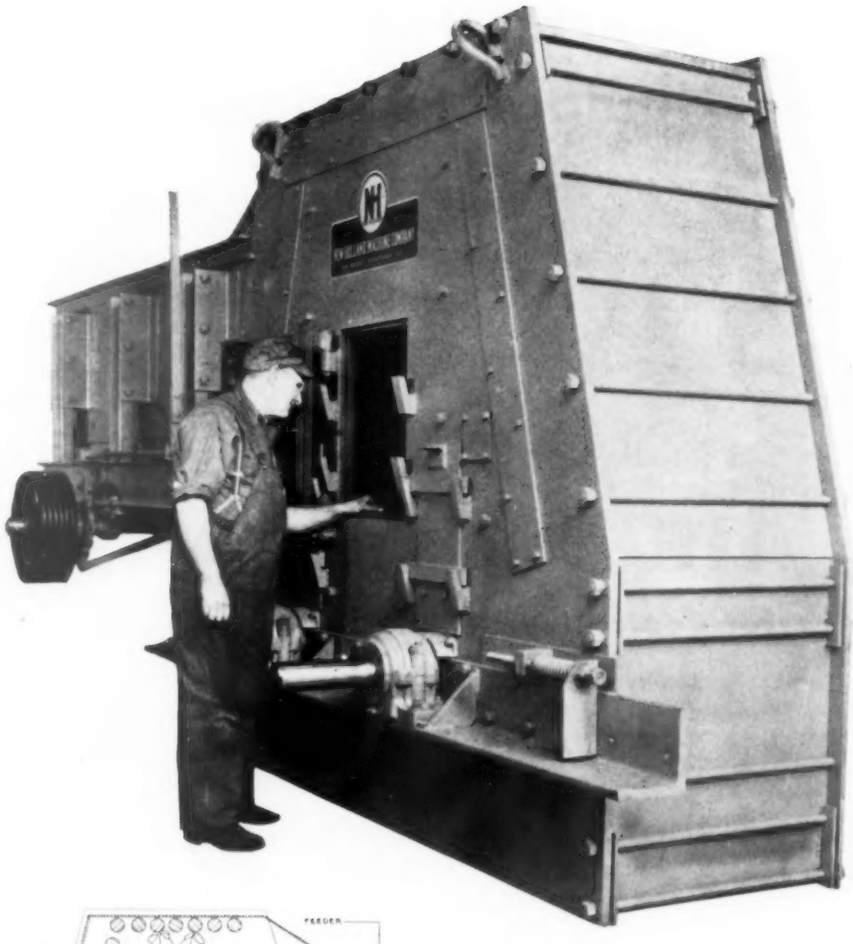
Also, assume that you send a salesman into a foreign state and he takes contracts or orders for merchandise, which he sends to you for shipment to the purchasers. This is strictly interstate business and you can not be taxed by the foreign state.

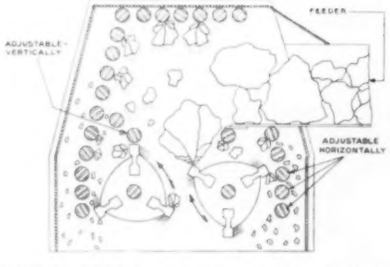
NEW HOLLAND Impact Primary Crusher

Doubles Agstone Output

...right from the start!

Side View of No. 3030 Crusher with detachable Reciprocating Feeder operating in McCorkle Stone Company plant, Milroy, Indiana.





HOW IT WORKS — Impacting action of the two gigantic impellers, turning in opposite directions away from each other (see arrows) strike stone in mid-air as it is fed into crusher. Material is thrown upward against grate bars and rebounds until reduced to required size. It then passes around impellers and out through discharge openings. Impellers travel at adjustable speeds of 250 to 1000 rpm. The size of finished product is easily and quickly controlled. Manganese steel impeller bars have four striking faces and may be reversed when worn.

Write Dept. J3 for complete details.

Sensational results in limestone reduction are reported by the McCorkle Stone Company of Milroy, Indiana, with their recently installed New Holland Model 3030 Double Impeller Impact Crusher.

In addition to increasing agstone output at least 100%, the new crusher produces such perfectly cubed material that the secondary crushers in the plant have considerably boosted capacities.

The New Holland unit is so flexible it can operate as a separate plant and so productive the McCorkle Stone Company is installing additional equipment to handle the increased capacity.

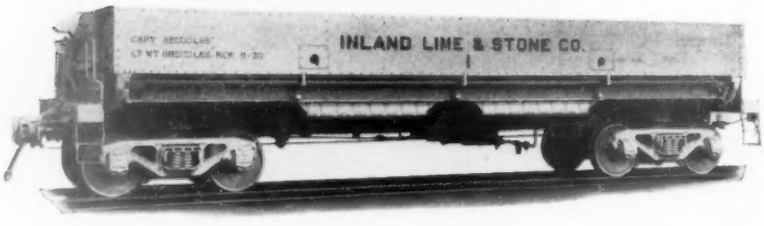
Handling run-of-the-quarry, feed stone ranging up to 30 inches, this New Holland machine is producing 100 tons per hour of minus 1-inch material with only 80 horsepower.

NEW HOLLAND NH MACHINE CO.

NEW HOLLAND, PENNSYLVANIA

★ Steelcar ★

Modern, Dependable Haulage Equipment



All Steel
AIR DUMP CARS
for Centralized Dumping Operations

★ 30 cubic yards level capacity

★ 45 cubic yards with average 30° heap

★ Load Carrying Capacity, 100,000 Pounds

Where dumping operations are centralized at one point, such as at the primary crusher of a limestone quarry, the dump cylinders, with which air dump cars are ordinarily equipped, may be omitted. In these cases a suitable pneumatic dumping arrangement is installed at the crusher.

The omission of dump cylinders reduces the initial cost of the cars by a very substantial amount and has the further advantage of lower maintenance expense. The cars otherwise possess the usual features of design and operation found in all Pressed Steel Air Dump Cars. Descriptive Bulletin with technical data on request.

Smooth Floor
Steep Dumping Angle
Free—Rapid Discharge
in few seconds of time.

PRESSED STEEL CAR COMPANY, INC.
INDUSTRIAL DIVISION
PITTSBURGH, PA.

TRAFFIC News Digest

CENTRAL FREIGHT ASSOCIATION DOCKET

Docket 78694 (2)—Stone, fluxing, furnace or foundry, melting or refractory, unburned in bulk, in open-top cars, carload medium weight 90 per cent. of marked capacity of car, except that when cars are loaded to full cubical or visible capacity, actual weight will apply. Establish on, from Hillsville, Walford and Shaw Junction, Pa., to Fort City and Avonmore, Pa., 116 cents per gross ton.

Docket 78741 (1)—Industrial sand, subject to minimum weights and application as described in PM Railroad Tariff 5694-K. Establish on, to Antrim, Mich., from so-called Vassar group, *viz.:* Juniata, McHale, Banksand, Watrousville and Millington, Mich., open cars 160 cents and closed cars 198 cents per net ton from so-called Paines Group, *viz.:* Paines and Hemlock, Mich., 160 cents open cars, 198 cents closed cars; from Daytona (Black Siding), Mich., 253 cents open cars, 253 cents per net ton closed cars.

Docket 78835 (1)—Clay, common ground, minimum weight 60,000 pounds, except when car of less capacity is furnished, in which case marked capacity of car will govern. Rule 24 of Official Classification not to apply. Establish on, from Minco (Paines), Mich., to Galt and Guelph, 420 cents, London 393 cents, Owen Sound 574 cents, St. Catherine 420 cents, St. Thomas 393 cents and Windsor, Ontario, 310 cents per net ton.

Docket 78837 (1)—Limestone, *viz.:* ground or pulverized unburned, minimum weight 60,000 pounds. Establish on, from Chicago, Ill., to Lowell, Ind., 121 cents per net ton.

Docket 78841 (1)—Limestone, agricultural, unburned, in bulk in open-top cars, carload minimum weight 90 per cent. of marked capacity of car, etc. Establish rates on from Speed, Ind., to representative B. & O. Railroad stations in Illinois shown in Exhibit A.

EXHIBIT A—Rates in cents per ton of 2,000 Pounds

	Proposed Rates
Sumner	138
Claremont, Higgins, Neb.	143
Clay Sity, Kenner, Xenia, Greendale	149
Iuka, Owsley, Odin, Sandoval	154

Docket 78846 (1)—Sand (bank, river or torpedo) and gravel, carload minimum weight 90 per cent. of marked capacity of car, etc. Establish on, from Standard, Pit, Ind., to Hatfield, Ind., 143 cents net ton. (Applies only in open-top cars).

Docket 78855 (2)—Crushed stone and crushed stone screenings, in bulk in open-top cars, carload minimum weight 90 per cent. of marked capacity of car, etc. Establish on, from Findlay, O., to McClure, O., 88 cents net ton.

Docket 78866 (2)—Sand and gravel, carload, as described in Rule 15, description A, IC tariff 13321-1, minimum weight 90 per cent. of marked capacity of car, etc. Establish on, from Riverton, Ind., to Whittington, and Ina, Ill., 123 cents net ton.

Docket 78867 (2)—Limestone, agricultural, unburned, in open-top cars, carload minimum weight 90 per cent. of marked capacity of car, etc. Establish on, from Woodville, O., to Westville, Ind., 163 cents net ton.

Docket 78874 (A)—Crushed stone, in open-top cars, carload minimum weight 90 per cent. of marked capacity of car, etc.

(B) Sand, all kinds, and gravel, in open-top cars, carload, minimum weight 90 per cent. of marked capacity of car, etc. Establish on, to Mansfield, O., from Sandusky and Soldiers Home, O., 44 cents per net ton.

Docket 78889 (2)—Limestone, agricultural (not ground or pulverized), unburned in bulk, loaded in open-top cars only, minimum weight per car 90 per cent. of marked capacity, etc. Establish on, from Carey, O., to Auburn Junction, Ind., 121 cents; LaGrange, Ind., 138 cents; Waterloo, Ind., 127 cents per net ton. From Rimer, Ind., to Auburn Junction, Ind., 110 cents; LaGrange, Ind., 121 cents and Waterloo, Ind., 116 cents net ton.

Docket 78894 (2)—Sand and gravel, carload, as described in Rule 15, description A, IC tariff 13321-I, minimum weight 90 per cent. of marked capacity of car, except that when loaded to full cubical or visible capacity, actual weight will apply. Establish on, from Riverton, Ind., to Hatfield, Ind., 143 cents net ton.

Docket 78895 (2)—Limestone, ground or pulverized, unburned, minimum weight 90 per cent. of marked capacity of car, etc. Establish on, from Speed, Ind., to Lafayette, Ind., 193 cents per net ton.

Docket 78911 (2)—Stone, crushed, in bulk, in open-top cars, carload minimum weight 90 per cent. of marked capacity of car, except that when cars are loaded to full cubical or visible capacity, actual weight will apply. Establish on, from Woodville, O., to Morenci, Mich., 101 cents net ton.

Docket 78917 (1)—Slag, commercial crushed (a product of iron and steel blast or open hearth furnaces), in open-top cars, carload as published in B. & O. Railroad Tariff 236, Ohio 6052. Establish on, from Cleveland, O., to Chardon, Clarks, O., 88 cents; Concord, O., 83 cents; Painesville, O., 77 cents; West Fairport O. 83 cents; Fairport Harbor, 83 cents per net ton.

Docket 78919 (2)—Stone, crushed, in bulk in open cars, carload minimum weight 90 per cent. of marked capacity of car, except that when cars are loaded to full cubical or visible capacity, actual weight will apply. Establish on, from Speed, Ind., to Crawfordsville, Ind., 132 cents per net ton.

Docket 78929 (2)—Industrial sand, subject to Columns 1 and 2 ratings and minimum weight as described in PM Railroad tariff 5694-K, from Hemlock-Paines, Mich., group to Milan, Mich., 127 cents in open cars and 165 cents net ton in closed cars.

ILLINOIS FREIGHT ASSOCIATION DOCKET

Docket IRC 511-333—Sand, blast, core, engine, filter, fire, foundry, furnace, etc., carload minimum weight 90 per cent. of marked capacity of car, except that when car is loaded to capacity the actual weight but not less than 40,000 pounds, will apply from Ottawa, Millington, Wedron, Ill., to Coleman, Ill. Present Class. Proposed—$1.38 per ton.

Docket IRC 511-335—Agricultural limestone, carload, minimum weight as shown in item 5, supplement 3 to MQ Railroad tariff 22-I, from Rivermines, Mo., to L. & M. Railway stations:

To (Representative)	Present	Proposed
Stallings, Ill.	128	95
Manix	128	102
Williamson	128	106
Mt. Oliver	None	106

Docket ORMV 762-33—Phosphate rock and limestone, phosphatic, as described in item 135 of L. & N. Tariff 44-G, I.C.C. A-16462, minimum weight 40,000 pounds, from points in Tennessee, shown in item 145 of aforementioned tariff, to Missouri Pacific R.R. stations in Illinois: Clores, Index 36470 to Marcoe, Index 36530. Present—$3.72 per net ton (expires Dec. 31, 1945). $4.08 per net ton (effective January 1, 1946). Present—$2.82 per net ton.

Docket IRC-511-338—Agricultural limestone, in open-top cars, carload minimum weight 90 per cent. of marked capacity of car, except that when car is loaded to full visible or cubical capacity, actual weight will apply, from Rivermines, Mo., to various C. & I. M. Railroad stations:

To (Representative)	Present	Proposed
Pawnee, Ill.	154	123
Taylorville, Ill.	132	123
Springfield, Ill.	155	128
Peoria, Ill.	198	158

DOCKET AND STATUS REPORT OF PRIOR SOUTHERN FREIGHT ASSOCIATION SUBMITTALS

Docket 33817 (shipper; suggested by carrier)—Carriers propose to establish rates on clay, crude, carload, as described in Item 550 of SFTB Clay Tariff 10-U, I.C.C. 809, Stevens Pottery, Ga., to Birmingham, Ala., 167 cents and to Bessemer, Ensley and Fairfield, Ala., 175 cents per

PAGE

STAR PERFORMERS

There's never any doubt about results when you put the PAGE WALKING DRAGLINE and PAGE *AUTOMATIC* BUCKET to work on your job ★ *Star Performers both,* they will increase your production on any type of work ★ Why not write for complete information?

PAGE ENGINEERING COMPANY
CHICAGO 38, ILLINOIS

RYERSON STEEL IN STOCK

Call Ryerson when you need steel—any kind, shape, or size. Large stocks are available at eleven convenient plants. Ask for a Ryerson Stock List—your guide to quick shipment of steel.

Principal Products Include:

Bars • Plates • Sheets • Structurals
Inland 4-Way Floor Plate • Mechanical Tubing
Boiler Tubes • Hi-Bond Reinforcing Bars
Allegheny Stainless • Alloy Steels • Tool Steel • Babbitt Metal • Wire • Chain
Bolts • Rivets, Etc.

JOSEPH T. RYERSON & SON, Inc.

Steel-Service Plants at:

CHICAGO, MILWAUKEE, DETROIT, ST. LOUIS, PHILADELPHIA, CLEVELAND, PITTSBURGH, CINCINNATI, BUFFALO, NEW YORK, BOSTON

ton, 2,000 pounds.

Docket 33856—(Establish rate 90 cents net ton on sand and gravel, carload, Alexandria to Front Royal and Riverton, Va. (shipper; suggested by carrier).

Docket 33863—Establish rate 100 cents net ton on limestone, carload, described Item 1065-B, SFTB Tariff 333-B, Whitestone to E. Point, Ga. (carrier).

Docket 33935—Proposed to publish rates on lime, carload minimum weight 50,000 pounds from Reddick, Fla., to F.E.C. Railroad stations, West Palm Beach, Fla., and south thereof to alternate with present rates subject to carload minimum weight of 24,000 pounds. Statement of rates will be furnished by Chairman Kerr upon request (shipper; suggested by carrier).

Docket 33959—Moulding sand, carload, described item 517 Southwestern freight traffic bureau, freight tariff 388-F, I.C.C. 840. Establish rate 308 cents ton 2,000 pounds. Lexington, Tenn., to St. Anne and Spring Valley, Ill. (shipper; suggested by carrier).

Docket 33991 (carrier)—Sand, carload (Item 995, SFTB tariff 316-C). Establish rate 80 cents ton 2,000 pounds Gadsden to Boyles, Ala.

SOUTHWESTERN FREIGHT BUREAU DOCKET

Docket 37579 (1)—Lime, Texas, to Lonar, Okla. To establish rates of 26 cents per 100 pounds, minimum 30,000 pounds and 21 cents per 100 pounds, minimum 50,000 pounds on lime, carload, from Dittlinger, Houston, Lime City, McNeil and other Texas producing points named in SWL Tariff 227-D to Lonar, Okla.

Docket 37623 (2)—Cement, Portland Colorado, to Texas. To establish on cement, carloads, from Portland, Colo., to P. & S. F. stations. LaTuna to El Paso Tex., (13700-13725) for domestic movement and to El Paso, Tex., for export to Mexico, rate of 33 cents per 100 pounds.

TRUNK LINE ASSOCIATION DOCKET

Docket 43125—Limestone, crude, fluxing, foundry and furnace, carload minimum weight 90 per cent. of marked ca is not now applicable on account of ex pacity of car, etc., in open-top equipment to Williamsport, Pa., from Inwood, Martinsburg, Engle, W. Va., and Stephens City, Capon Road, Va., $1.85; from York, Thomasville and Bittinger, Pa., $1.65; from Annville, Avon, Lebanon, Myerstown, Palmyra and New Hope, Pa., $1.55 per gross ton. Reason: Comparable with rates applying from and to other points.

Docket 43138—Originated by shipper, stone, fluxing or foundry, in bulk, in open-top equipment, carload minimum weight 90 per cent. of marked capacity of car, etc., from Lockport, N. Y., to Elmira and Painted Post, N. Y., $1.72; Falconer and Jamestown, N. Y., $1.23; Dansville, N. Y., $1.48 per gross ton; and from Bellefonte, Pleasant Gap and Howard, Pa., to Elmira, N. Y., $1.60 per gross ton. Reason: Comparable with rates applying from and to other points.

Docket 43148 — Limestone, broken, crushed, ground or pulverized, carload minimum weight 60,000 pounds, from South Bethlehem, N. Y., to various destinations in New York and Pennsylvania as per Exhibit A, copy of which will be furnished on request, rates reflecting I.C.C. Docket 25220 scale, in lieu of present sixth class rates. Reason: Comparable with rates applying from and to other points.

WESTERN TRUNK LINE NEW APPLICATIONS

Docket D-25-167—Lime in mixed carloads with plaster, plasterboard and/or stucco. Between stations in Iowa. Proposed—Rates will also apply on lime in mixed carloads with plaster and/or stucco and/or plasterboard, the weight of the lime not to exceed 25 per cent. of the total weight on which freight charges are assessed; the carload minimum weight to be the highest provided for any article in the mixed carload. (By shipper)

Docket E-41-704—Sand and gravel, carload, minimum weight 90 per cent. of marked capacity of car, except that when loaded to full visible capacity, actual weight will apply. From Union, Mo., to St. Louis, Mo. Proposed—To apply rate of 28 cents per net ton of 2,000 pounds. No switching to be absorbed. (By shipper)

WESTERN TRUNK LINE COMMITTEE HEARINGS

Supplement No. 1 to Hearing Bulletin 1058
October 26

Application No. 25-165—Lime, plaster, calcined; stucco and/or wall plaster in mixed carloads with cement, hydraulic, Portland or natural, etc., from origins in Western Trunk Line Territory as published in WTL Tariffs 132-J and 133-J to Stations in Minnesota, North Dakota and South Dakota on the G.N., M.St.P.& S.S.M. or N.P., where the proposed basis is not now applicable on account of exception No. 1 contained in Item 185-I of WTL Tariff 132-J and Item 165-I of WTL Tariff 133-J. Proposed 3¼ cents per 100 pounds higher than the applicable carload rate on cement.

RAPID, UNIFORM LOW COST CRUSHING

TO AGSTONE FINENESS OR ROADSTONE COARSENESS *with*

AMERICAN CRUSHERS

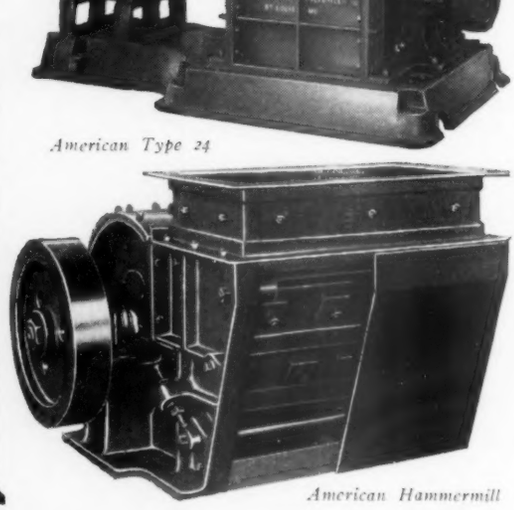
American Swing Hammer Types and American Hammer Mills are available in types and sizes to fit any quarry or pit operation. Easily installed in minimum headroom and high tonnage capacities for rapid feed from conveyor operations.

Americans are of sturdy sectional construction, readily dismantled and relocated.

Capacities from 20 to 55 TPH. There's an American to fit your operation.

Write for details and specifications.

American Type 24



American Hammermill

American PULVERIZER COMPANY

Originators and Manufacturers of Ring Crushers and Pulverizers

1059 MACKLIND AVE. ST. LOUIS 10, MO.

NEW MACHINERY and SUPPLIES

• Precision Motor Control

Single knob precision control of any type of reversible motor is now possible with the Yardeny Pulsing Drive, developed by the Yardeny Engineering Company of New York, New York. A

Provides incremental or continuous motion.

motor may be continuously rotated or moved in small increments in either direction by this one-control knob, the makers claim. By depressing the knob and turning right or left, continuous forward or reverse rotation of the motor can be accomplished. The Yardeny Pulsing Drive works on all standard currents and frequencies and is said to be adaptable to all existing controlled motor devices.

• Roach Repellent Cement

A magnesium oxychloride cement known as Hubbel-lite contains finely divided copper which produces a lethal effect on yeast, bacteria and molds, and also serves as a cockroach repellent. As a safety factor where inflammable materials are stored, this cement is said to drain off static charges of electricity. The manufacturer, H. H. Robertson Company of Pittsburgh, Pennsylvania, recommends the application be ⅜ inch to ½ inch thick on ordinary cement or wooden floors, and that no water be applied for 3 weeks, the time required for the toxic effect to become apparent. Traffic may be resumed 24 hours after the cement has been laid.

• Liner Protects Mill

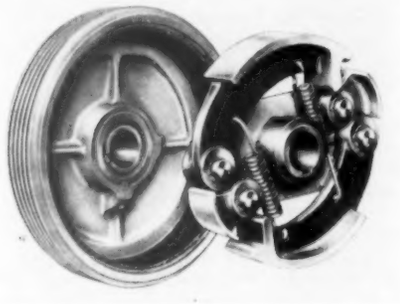
To increase the life of grinding mill linings, the Allis-Chalmers Manufacturing Company, 275, Milwaukee, Wisconsin, announces its new A-C Lorain Liner, which consists of lifters and liner plates in two separate units, in contrast to the integral one-piece construction used in conventional cast liners.

Adaptable to mills which can be lined with standard cast liners, the A-C Lorain Liner is fabricated from standard flats and shapes of high-carbon rolled steel which guarantees homogeneous grain structure for maximum wear-resistance. The principle of separate lifter and liner plate construction permits worn lifters to be reversed for additional wear before replacement. This leaves the liner plates intact until it is necessary to reverse or replace them.

Reduction in thickness and weight and the increased adaptability of the new A-C Lorain Liner, say the manufacturers, results in lower lining cost, lower maintenance, and an enlarged lining diameter for increased mill capacity.

• Centrifugal Clutch

Progressive application of power to the driven machine is now made possible by a centrifugal device known as the Salsbury Automatic Clutch, produced by Salsbury Motors, Inc., Los Angeles, California. Offering the advantages of a fluid drive, but permitting complete disengagement while idling and positive engagement when driving, this clutch re-



Complete idling and positive engagement clutch.

portedly performs both operations without human influence.

Direct installation on the shaft of any engine or electric motor is possible with either of two models, the first of which handles operations up to 3 horsepower, the second up to 6 horsepower. Different drives can be mounted on the shaft: V-belt or flat belt pulley, gear, sprocket, coupling, or a variable speed transmission. It is recommended for application on cement mixers, pumps, conveyor systems, hoists, winches, and yard tractors for material-handling winches.

• Heavy-Duty Shovel

The first postwar addition to its line is announced by the Marion Steam Shovel Company of Marion, Ohio, as a new type 151-M heavy-duty, close-cou-

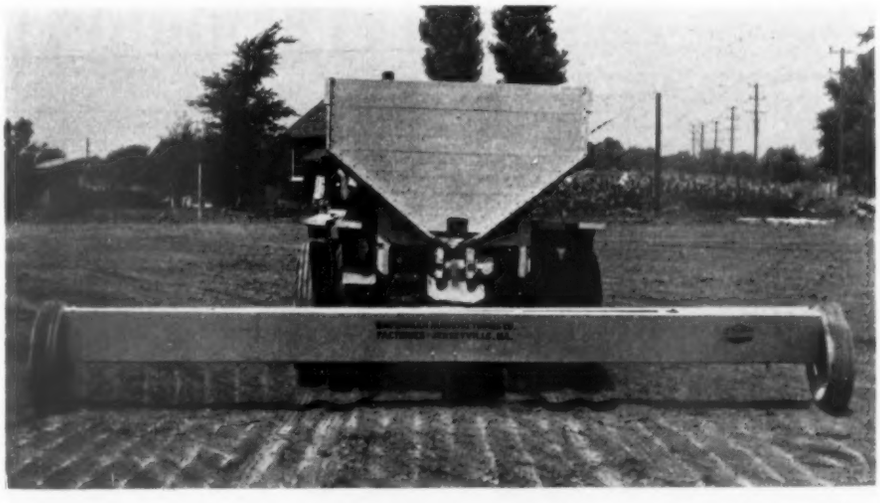
Close-coupled convertible dragline-shovel.

pled shovel carrying a 6-cubic-yard dipper with a standard front end or a 5-cubic-yard dipper with a long-range front end. It is convertible to a dragline machine with dragline bucket sizes varying from 3½ to 7 cubic yards, depending on the boom lengths, which range from 80 to 120 feet.

Marion has incorporated in its 151-M the Amplidyne or the Rototrol Ward-Leonard system of electrical controls, providing more speed and accuracy and delicate control over all motions. Additional features which are said to make it adaptable for heavy service jobs include outside dipper handles, single hitch to dipper, herringbone gear drive to hoist drum, and a two-piece heavy-duty dipper.

• A New Car Puller

A class 2½ Lo-Head car puller has been introduced by the American Engineering Corporation, Philadelphia, Pennsylvania. This device, incorporating the barrel, gear box and motor in a single unit, is said to have a starting line pull of 5,000 pounds, using a single line, or increased pull with various block combinations.

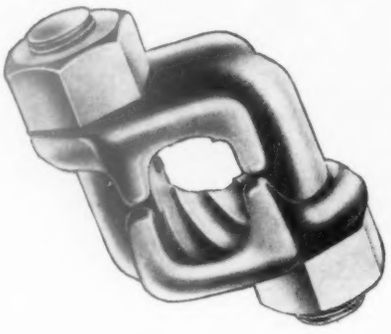


The above photo shows a Model P phosphate spreader, produced by the Baughman Manufacturing Company of Jerseyville, Illinois. Built in ranges from 9 to 16½ feet, the spreader can be pulled behind any make of spreader box or behind a truck or tractor, scooping or dumping the phosphate into the machine manually.

PROTECT

BETTER, PREFORMED ROPE WITH BETTER

"FIST-GRIP" CLIPS



Cross-section views (nuts tightened to same tension by torque-indicating wrench) show—

how "Fist-Grip" clips hold rope closely to original shape.
how "finger-pinch" U-bolt squeezes upper hemp center, distorting, weakening rope.

3 WAYS "FIST-GRIP" SAFETY CLIPS SAVE

1. They Save Skill by eliminating difficult, expensive splicing. Foolproof . . . can't be applied backward or upside down.

2. They Save Metal. Three "Fist-Grip" Safety Clips do work of 4 ordinary U-bolts. Improved bearing surfaces provide more friction. They save rope too because they don't crush or break it.

3. They save time. Easy and speedy to install. Fewer needed. No special wrenches.

Laughlin "Fist-Grip" Safety Clips are ideal not only for preformed wire rope but ordinary wire rope as well. The only clips with drop-forged bolts, their "Fist-Grip" is as strong as rope itself. Distributed through mill, mine and oil field supply houses. For a complete catalog on Laughlin's wire rope and chain hardware, write Dept. 3, The Thomas Laughlin Co., Portland 9, Maine.

LAUGHLIN

THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS

• Convertible Shovel

Four new heavy-duty machines, including a chain-drive crawler and three rubber-tired machines, one with four-wheel drive, one with six-wheel drive,

One of four heavy-duty machines.

and the third of the self-propelled type, constitute the Lorrain "41" series of the Thew Shovel Company of Lorrain, shovel, crane, dragline, clamshell, or back-digger.

The four-wheel drive Moto-crane is of 20-ton capacity on a six-wheel rubber-tired carrier having a maximum speed of 28 miles per hour, with ten speeds forward and two in reverse.

The six-wheel drive unit is a 20-ton-capacity crane, with a double-reduction drive on all axles, eight speeds forward and two in reverse, and a traveling speed of 31 miles per hour. Steering is air-power-assisted, and air brakes are on all six wheels. The self-propelled crane is also a 20-ton-capacity unit, capable of four speeds from 1 to 7 miles per hour in both directions. The hoist, swing, travel and boom derricking may be effected simultaneously.

• 8½-cu.-yd. Scraper

An 8½-cubic-yard scraper (11 cubic yards heaped) incorporating many new design features developed and proved over a period of two years by actual field tests is now being offered by LaPlant-Choate Manufacturing Company, Inc., of Cedar Rapids, Iowa.

A special feature of this new model, the C-108, is a floating apron that opens

Employs a floating apron.

30 inches before the rear gate moves, permitting adjustment of the apron to any position before loading. The apron clears the load completely as the rear gate starts to move forward, thus preventing any compaction of load between gate and apron. The open-top bowl, free of overhead obstructions, permits loading by shovel, dragline, or elevating grader and the high lift of the apron enables the scraper to discharge any type of material from the bowl, including rock or sticky gumbo.

The scraper is the front-dumping forced-ejection type, designed to facilitate spreading, which is possible from ½ inch to 18 inches. Dumping is said to be much easier, and much less of the tractor horsepower is utilized for dumping and spreading because of the new arrangement of the sheave mechanism and design of the linkage. The bowl can be raised and lowered quickly due to the cam action on the bowl lift cable. This is very advantageous when loading sand, gravel or loose material as it facilitates quicker dumping action.

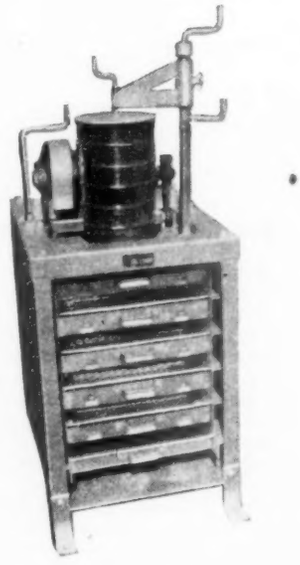
Hauling characteristics of the new scraper are equally pronounced. The ground clearance of the bowl is 14 inches.

In digging and loading, the rear wheels are inside the cut at all times, yet because of the scraper's low center of gravity, effective side-slope work is possible.

Structurally the new scraper incorporates the following features: deep box-plate sections; welded construction; special steel, resulting in reduced weight; reversible cutting edge; tapered roller bearings for wheels; and the choice of three tire sizes.

• Test Sizing Attachment

The Gilson Screen Company of Mercer, Pennsylvania, announces a new screening attachment for test sizing of sand and similar fine material. The

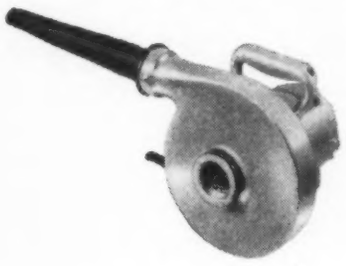


Uses 8-inch sand sieves.

Standard Gilson Mechanical Testing Screen will accommodate up to one cubic foot of sample, making from two to seven separations simultaneously. Smaller amounts of very fine materials may be handled and the screen used for research or other mass-separation jobs down to 100-mesh or finer. The new attachment, using 8-inch sand sieves in conjunction with the vibrating unit, makes it practical to size test samples, in proper quantities to be representative throughout the size range from 3½-inch to 200 mesh.

• Portable Electric Blower

Model A, a new 1-horsepower, 2-speed portable electric blower has recently been placed on the market by the Ace Company of Ocala, Florida. The



Two-speed aluminum blower.

high speed is capable of 176 cubic feet per minute, while the low speed is rated at 125 cubic feet per minute. This blower is available for any voltages from 100 to 275, and is approved by the Underwriter's Laboratories. It is constructed of polished aluminum castings, sealed ball bearings, and has an insulated rubber nozzle. Three other models are made by the Ace Company—Model B, a heavy-duty blower displacing 95 cubic feet of air per minute; Model C, 80 cubic feet per minute; Model D, rated at 40 cubic feet per minute.

• A New Tilting Mixer

The T. L. Smith Company of Milwaukee, Wisconsin, has introduced a new 3½-inch tilting mixer which employs a high-tension magneto and a rope starter with its Wisconsin air-cooled engine. Enclosed in the enginehouse is a roller chain running at low speed on machine-cut sprockets which supplies power to the drum drive-shaft. The engine is made accessible by the use of a hinged cover on the housing.

• Crawler Mounted Excavator

A new crawler shovel, model 61, has been announced by the Byers Machine Company of Ravenna, Ohio. A ½-yard excavator on crawler mounting, this new shovel features Airflex finger-tip air clutches, gears enclosed and running in

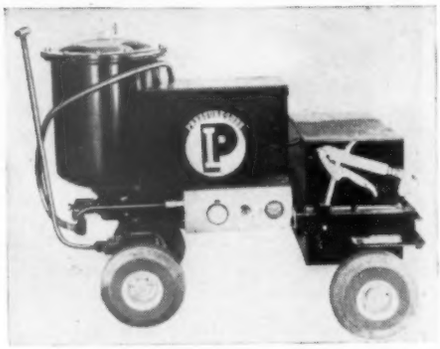
Four simultaneous motions.

forced circulating oil, wide, large tandem drums, and a new worm-type boom hoist.

Clutches for steering the crawlers to the left or right are engaged by the same air pressure that is employed for the upper deck friction clutches. The crawler steering and chocking brakes are automatically set by spring action when the clutches are disengaged. Another feature of the model 61, says the manufacturer, is its ability to hoist, swing, travel, and steer at the same time. All main frames are of welded and bridged-rolled steel construction. For soft ground travel or for crane and dragline work, wider and longer crawlers are available.

• High-Pressure Lubrication

A new portable greasing unit, which can be supplied with a grease gun for every purpose and is available either



Capable of 12,000 pounds of pressure.

with battery power or a gasoline-driven motor, is introduced by Pressurelube, Inc., New York, New York. On-the-spot lubrication is possible for trucks, trailers, tractors, steam shovels, and all rolling stock without removing the load, as the unit delivers up to 12,000 pounds of steady, consistent pressure. Other advantages claimed for this portable greaser are its ability to reach difficult spots, minimum requirements on floor space, and minimum moving parts, due to simplicity of design.

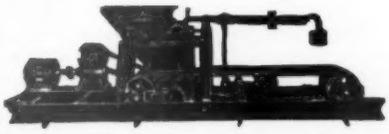
• Heavily-Covered Electrode

A new heavily-covered arc-welding electrode for welding low-alloy, high-tensile steels has been announced by the Electric Welding Division of the General Electric Company. Specially designed for use on carbon-molybdenum steel in the high-pressure piping industry, this electrode may also be applied to vessels (fittings) and structural weldments of innumerable kinds.

Known as Type W-56, the new electrode operates satisfactorily on either a. c. or d. c. reverse polarity, and its range of current is sufficiently broad to cover a wide range of plate thicknesses. A medium-long arc is recommended for best results with this electrode. It can be used in the flat, vertical, and overhead positions. Moreover, it produces a relatively flat deposit, particularly in the vertical position.

Features of the new electrode, says G.E., include a stable spray-type arc, deep penetration, and creep-resisting qualities. In addition, the covering used produces an easily removed, light, friable slag, which sets up fast, thus facilitating proper manipulation of the electrode. The electrode is available in sizes ⅛-, 5/32-, and 3/16-inch diameter.

"In this corner..."



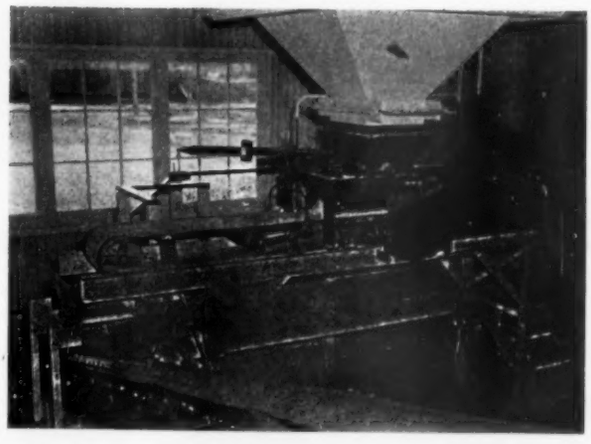
SCHAFFER POIDOMETER

the WINNER

for blending, weighing and recording bulk materials

Production records prove that SCHAFFER Poidometer is the champion "speeder-upper" for handling raw and finished materials.

This automatic, accurate and extremely durable weighing and feeding machine assures high output and uniform quality products, with low labor and upkeep costs.



One of several Poidometers on duty in the Ludington, Mich., plant of Dow Magnesium Co.

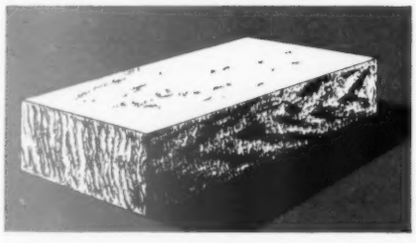
Write for Catalog No. 5

SCHAFFER POIDOMETER CO., 2828 Smallman St., Pittsburgh 22, Pa.

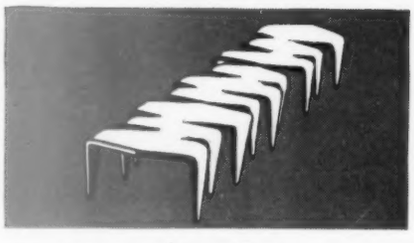
IT'S EASIER AND QUICKER

to use this

and this



and



to fix this

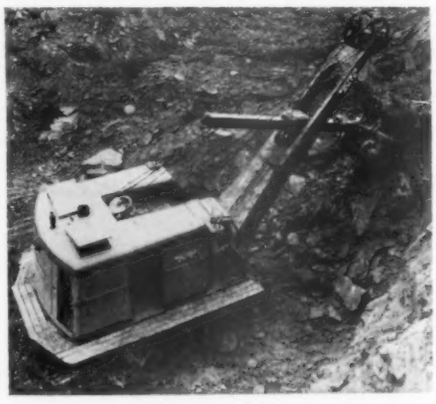
BRISTOL'S BELT LACING

For rubber or woven conveyor belts up to $13/16$" thick.
Write for Bulletin 736.

THE BRISTOL COMPANY
Mill Supply Division
137 Bristol Road, Waterbury 91, Conn.
DISTRIBUTORS EVERYWHERE

• Convertible Excavator

A new 1½-cubic-yard model 38-B fully convertible excavator has recently been announced by the Bucyrus-Erie Company of South Milwaukee, Wisconsin. Con-



Offers operating refinements.

structed for equal effectiveness as a shovel, dragline, crane, or clamshell, the 38-B is said to offer several operating refinements. As a dragline it has large working ranges, with a new mast-type suspension for long booms, full rotating fairlead, and a variety of wide, long and tapered end crawler mountings for operations in soft ground. A light boom with large-diameter point sheaves, independent positive twin rope crowd, and a high lip all-welded dipper are features of the shovel. The 38-B as a crane offers long booms with optional jib extensions, two-clutch-operated independent boom hoist with full, accurate power control of raising and lowering, and optional independent two-speed propulsion.

• Load Control for Generators

The recent development of a completely automatic load-control of Diesel-powered generating sets by engineers of the R. H. Sheppard Company reportedly makes possible maximum power-cost savings. Because load-control cuts operating time of the power plant to periods

Diesel generating set equipped with load-control.

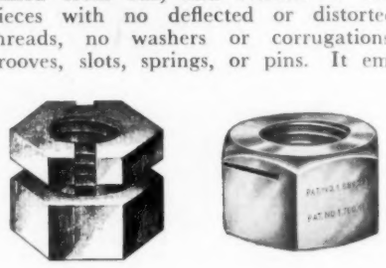
when power is actually required, it reduces fuel consumption and prolongs the life of equipment.

The flick of any lighting or appliance switch on an electrical circuit supplied by a Diesel-powered generating set equipped with load-control will automatically start the generator. Power is instantly available. When the switch is turned off, load-control immediately stops the power plant.

Load-control requires no special wiring; it is simply connected to the regular service leads. Load-control will be available exclusively on Sheppard diesel generating sets.

• Two Types of Lock Nuts

Columbia Nut & Bolt Company, Inc., of Bridgeport, Connecticut, offers two distinct types of lock nuts. The Original Columbia Lock-Nut is made of steel, milled from bar, and consists of two pieces with no deflected or distorted threads, no washers or corrugations, grooves, slots, springs, or pins. It em-



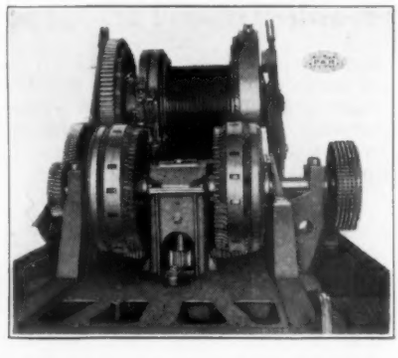
No washers, springs, or pins needed.

bodies the principle of a perfect union, with uniform thread bearing and exact taper.

The Columbia Self-Retaining Nut, like the Original Columbia Lock-Nut, may be applied, removed, and re-applied as often as is necessary, says the manufacturers. The spring top is compressed when the nut is turned onto the bolt, thus producing a friction tension which prevents loosening. It is claimed that vibration will not affect it in any way.

• New Electric Clutch

The Harnischfeger Corporation of Milwaukee, Wisconsin, is now offering to the excavator industry its new Magnetorque unit, an electric clutch which



Eliminates linkage and adjustments.

has given satisfactory service in four years of tests on large friction shovels. This new clutch transmits power for swing and propelling motions by means of electromagnetic forces, thereby eliminating frictional connections between the mechanism and the engine that drives it. Execution of both motions is effected through the Magnetorque unit by two small controls at the operator's station. Another feature claimed for this unit is its independence of linkages and adjustments which are normally necessary in overcoming the inertia of the revolving structure, including the boom and load.

TRADE NOTES

F. G. Hoyt

Firman G. Hoyt, salesman for the past six years at the Los Angeles Branch of John A. Roebling's Sons Company, has been promoted to the position of product sales manager of the Woven Wire Fabrics Division of the Company at Trenton, New Jersey. Mr. Hoyt succeeds W. K. Paff, who retired recently after 50 years of service with the company.

The Syntron Company, Homer City, Pennsylvania, announces the appointment of J. A. Armstrong as district manager of the company's sales and engineering service on their line of Vibratory Material Handling equipment for Michigan, with the exception of the Detroit metropolitan area, with headquarters in Lansing. He will also supervise the sale of portable electric tools and self-contained, gasoline hammers in the same area.

Canadian Ingersoll-Rand Company, Ltd., of Sherbrooke, Quebec, has announced the appointment of George M. Dick as manager of engineering. Mr. Dick joined the Ingersoll-Rand Company in 1915. He was appointed technical assistant to the works manager at Sherbrooke in 1942.

W. G. Frome

Weston G. Frome was recently appointed general manager of the Explosives Department of Atlas Powder Company, succeeding F. S. Pollock, vice-president, who was elected a member of the executive committee.

Mr. Frome joined Atlas in 1913 shortly after its incorporation. He became assistant general manager of Giant Division in 1934 and general manager in 1942, and assistant general manager of the Explosives Department in 1943.

The Wickwire Spencer Steel Division of the Colorado Fuel and Iron Corporation has announced the purchase of the business and assets of the Coburn Trolley Track Company of Holyoke, Massachusetts. The company will immediately assume full control of all management, production and sales operations of Coburn.

Francis J. Downs, formerly in charge of the contractors' division of the American Road Builders Association, has accepted a sales position with Schramm, Inc.

John A. Leschen, vice-president of A. Leschen & Sons Rope Company of St. Louis, Missouri, died of a heart disease November 13. In 1875 he became a salesman for the firm, which his father had founded in 1857, and in 1898 was appointed a vice-president.

Daniel J. Bradley, former assistant manager of the International Harvester Company's motor truck branch at Syracuse, New York, is now manager of the company's Philadelphia branch. Mr. Bradley was made assistant manager of the Syracuse office in 1944 after progressing through the company's sales division, which he joined in 1934 at Philadelphia.

Walter Muller, former president of the Ransome Machinery Company, a Worthington Pump & Machinery Company subsidiary at Dunellen, New Jersey, has severed his connection with that organization after an association of 38 years. Mr. Muller, on August 1, announced that he had formed the Muller Machinery Company, Inc., (construction machinery) of New York City.

Frank Miller, the "Dean of the Rubber Industry", is here pictured receiving a service pin award from President Thomas Robins, Jr., in recognition of his 50 years with Hewitt Rubber Corporation. Mr. Miller is a vice-president in Hewitt's

Left: Frank Miller; right; Thomas Robbins, Jr.

Chicago office. Others who received awards at the company's recent testimonial dinner in Buffalo were Joseph Kamrowski, William Bauer and Charles Paeplow. Their combined service years total 110.

A gold "Oscar" for the best annual report for the year 1944 was awarded to the Caterpillar Tractor Company of Peoria, Illinois, by *Financial World* magazine, which sponsored a report survey. Formal presentation was made on October 2 at a dinner in New York City, at which Louis Guenther, president of *Financial World*, made the award to A. T. Brown, executive vice-president of Caterpillar.

Directors of the Sasgen Derrick Company of Chicago recently elected M. F. Sasgen president and treasurer of the firm, to succeed his father, the late Michael J. Sasgen. Mr. Sasgen has for many years been vice-president and general manager of the company.

G. F. Goodyear

George F. Goodyear has joined the executive staff of Hewitt Rubber Corporation, where he will be assistant secretary and also head of the legal department of Hewitt and its subsidiary company, Robins Conveyors, Inc., of Passaic, New Jersey.

W. N. Fischer

The appointment of Walter N. Fischer to the newly created position of assistant to the general sales manager is announced by R. G. LeTourneau, Inc., of Peoria, Illinois. Mr. Fischer's promotion will entail assisting Gordon S. McKenty, general sales manager, in general office administration, as well as working closely with divisional sales managers in the coordination of the exclusive LeTourneau distributor sales organization.

Scheduled for completion by next March, work is now progressing on the new Chicago plant of Patten Tractor & Equipment Company. Ground was broken recently at a ceremony attended by officials of the Patten company and Caterpillar Tractor Company, for whose products Patten Tractor & Equipment Company is exclusive distributor in northern Illinois and northwestern Indiana.

W. A. Wotherspoon, sales representative of Gildemeister & Company, Ltda., Santiago de Chile, S.A., recently visited Chicago headquarters of the Link-Belt Company. Gildemeister is the exclusive Chilean representative for the Link-Belt Company and the Link-Belt Speeder Corporation, with branches in Coquimbo, Valparaiso, Concepcion, Temuco, Valdivia, Osorno and Puerto Montt.

A. G. Brown

Two changes in the sales executive organization of Fairbanks, Morse & Company have been announced by the firm. Arnold G. Brown, formerly assistant manager of the Pump Division, succeeds John S. King as manager of that division. Mr. Brown was general sales manager of the Pomona Pump Company when it was purchased by Fairbanks Morse last year.

Mr. King succeeds C. H. Wilson as acting manager of the Railroad Division.

Joseph George Bears, advertising manager for the Link-Belt, Ltd., died recently in Toronto, Ontario, aged 52 years. Mr. Bears was treasurer of the Ontario Division of the National Industrial Advertisers Association. Having come to Canada from England, he joined Link-Belt, Ltd., in 1922.

The appointment of James L. McGovern, Jr., to the position of replacement sales manager of the Raybestos Division, Raybestos-Manhattan, Inc., has recently been announced. Mr. McGovern has been associated with the division for the past 21 years as salesman, Eastern zone manager and supervisor of replacement field sales. Jerome W. Brush, Jr., former manager of the rubber products department, has been elevated to the position of merchandising manager.

This One Respirator does the job of Four

Yes, workers get 4-way safety with this Willson respirator. Protects lungs against 4 different industrial hazards. Metal fumes. Pneumoconiosis-producing dusts. Toxic dusts. Nuisance dusts.

Two double filters provide extra-large filtering area. Give workers the greater comfort of free-and-easy breathing. Filters are throw-away type. May be easily, inexpensively replaced.

Face piece available in two sizes to fit either small or large face. Both sizes carry Bureau of Mines approval. Compact, the respirator may readily be worn under a welding helmet.

For help on your lung-protection problems, get in touch with your Willson Distributor or write direct to Dept. PQ-12.

GOGGLES • RESPIRATORS • GAS MASKS • HELMETS

DOUBLE WILLSON

PRODUCTS INCORPORATED

READING, PA., U. S. A. Established 1870

C. H. Morse

Charles H. Morse III has been elected vice-president of Fairbanks, Morse & Company, according to an announcement by Colonel Robert H. Morse, president.

Mr. Morse will be in charge of research patents, traffic, the company's western pump division, and the Inland Utilities Company, Fairbanks-Morse subsidiary with properties in 41 cities and towns in Colorado, Kansas and New Mexico. His headquarters will be in Chicago.

Appointment of four new distributors of Osgood and General Excavator construction, excavating and materials handling equipment, of Marion, Ohio, has just been announced.

The General Machinery Company, Spokane, Washington, will provide sales, maintenance and warehouse service in the Inland Empire region.

The American Equipment Corporation, with headquarters at Harrisburg, has taken over the combined Osgood-General franchise for several Pennsylvania counties.

The Carl R. Miller Tractor Company of Des Moines will serve central Iowa.

J. S. Innes, Ltd., of Leaside, Ontario, will handle the eastern Ontario area.

T. A. Warner

Trowbridge A. Warner has been appointed sales manager of Hendrick Manufacturing Company, of Carbondale, Pennsylvania, effective October 1.

Mr. Warner was formerly sales manager of the Register and Grille Manufacturing Company, Brooklyn, New York, and earlier had held a similar post with Tuttle & Bailey Manufacturing Company of New Britain, Connecticut.

The Associated Equipment Distributors have announced their program of veterans' employment and rehabilitation, which has the assurance of Perry Faulkner, Director of Veterans' Employment Service of the U. S. Employment Service, that all field representatives of his organization will cooperate in every way in the furtherance of this program. Investigation and study of veterans' employment problems was begun some time ago by the A.E.D., through a committee headed by A. F. Garlinghouse of Los Angeles, California. In view of the projected plans for post-war construction and expansion, it is the aim of the A.E.D., distributors and manufacturers of construction machinery, to set up a means to provide jobs for every returning veteran once employed in the industry and also to ascertain how many new positions might be open to those who had had no previous connection with the industry.

To effectuate their policy, A.E.D. has appointed representatives in all states to investigate veterans' problems and supply federal and state officials of the Veterans' Employment Service, with data and suggestions, so that applicants might be intelligently advised whether their past training, interests and aptitudes would lend themselves to employment in this field of activity. Types of jobs available within the construction industry are to be listed, and suggestions made as to which ones might be filled by disabled veterans. The jobs will be classified under three main headings: distributors, manufacturers, and contractors.

C. A. Butcher

Charles A. Butcher, formerly manager of the Pacific Coast Manufacturing and Repair Department of the Westinghouse Electric & Manufacturing Company, Oakland, California, has been recently appointed assistant general manager of the Crocker-Wheeler Division, Joshua Hendy Iron Works, Ampere, New Jersey.

Herbert P. Mee, a former vice-president of Caterpillar Tractor Company, died recently in Santa Barbara, California. He joined the C. L. Best Tractor Company in 1920, and when that company and the Holt Manufacturing Company merged in 1925, to form the Caterpillar Tractor Company, he became treasurer. In 1934 he was made vice-president of sales, later taking over the administration of advertising and service. He had been retired since 1937.

Details of a $30,000,000 post-war construction program covering all the chemical manufacturing departments of the company were released today by Hercules Powder Company of Wilmington, Delaware. Construction of the new plants and increased facilities will be completed within the next three years, the company said.

Louis Russel

Louis R. Russel has been appointed chief engineer of Insley Manufacturing Corporation's Crane and Shovel Division, in charge of research, design and development of new models. Mr. Russel has had 38 years of experience in design engineering with several shovel concerns, including the Erie Shovel Company, the Bucyrus-Erie Company, the Koehring Company and the Marion Steam Shovel Company.

Harold A. Waite, former mining engineer in Buenos Aires, Argentina, is now associated with the Worthington Pump & Machine Company of Salt Lake City, Utah, as application engineer for Utah, Nevada, Idaho, Colorado, Montana, and Wyoming.

F. P. Clark

Lieutenant Franklin P. Clark, recently of the Navy Bureau of Supplies and Accounts, has been appointed sales manager of the Upson-Walton Company of Cleveland, manufacturers of wire rope, fittings, tackle blocks and brattice-cloth.

Lieut. Clark, whose wartime job was the procurement of wire rope and other critical materials for the Navy, previously had been associated with the Jones & Laughlin steel Corporation, of Pittsburgh.

The Industrial Engine and Marine Engine Divisions of Chrysler Corporation have announced through Joseph A. O'Malley, vice-president, that Chrysler industrial engines hereafter will be sold through a dealer organization, as well as direct to manufacturers of equipment calling for this type of power.

In an attractive two-color booklet entitled *The Story of Standard Steel Works* the Baldwin Locomotive Works tells the history of 150 years of steel making by the firm's Standard Steel Works Division. Production began at Burnham, Pennsylvania—still the division's location—in 1795, at what was then called "Freedom Forge."

The Board of Directors of Thermoid Company of Trenton, New Jersey, has announced the election of John Owen as assistant vice-president of the corporation. Mr. Owen, who had been an executive of Austin Western Company of Aurora, Illinois, came to Thermoid in 1942. He will continue as manager of the Industrial Rubber Division, a position he assumed in January, 1944.

E. M. Brickett

Edward M. Brickett, who until a few months ago was associated with the Hume Pipe Company of New England, Inc., recently joined the Cement Division of the Dewey & Almy Chemical Company.

Mr. Brickett's experience has included concrete design and field control in construction and products. His new duties will entail research and the promotion of products for use in the cement and concrete industries.

F. L. Smidth & Company of New York City celebrated its 50th anniversary on November 14, having started actively in business on November 14, 1895. During this period the firm has established an internationally famous name in the field of designing and equipping cement plants.

W. R. Ellis, general manager of the explosives department of the Hercules Powder Company of Wilmington, Delaware, was recently elected vice-president of the company. J. B. Johnson succeeds Mr. Ellis as general manager.

A. W. Herrington, Marmon-Herrington board chairman, has announced that full-scale manufacture of the company's regular line of All-Wheel-Drive trucks and Ford conversions for commercial and industrial services will be in effect very soon. At the same time, the great expansion of Marmon-Herrington facilities during the past few years provides adequate additional capacity to manufacture the new line of trolley coaches.

Louis Herscovitz, who formerly was sales manager of the Western Division of the Ruberoid Company at Chicago, has been named vice-president and general sales manager. Mr. Herscovitz's headquarters will be at the main offices in New York City.

R. N. Landreth has been appointed assistant to the vice-president of the general machinery division of Allis-Chalmers. Mr. Landreth, who has been special representative for the company, will continue to reside in Washington, D. C., and will function on assignments from Milwaukee.

At a meeting of the MacWhyte Company board of directors on October 12, R. P. Tyler was elected to fill a vacancy caused by the resignation of Mrs. George S. Whyte. Mr. Tyler is also general sales manager of the company, which manufactures wire, wire rope, slings, aircraft cable, terminals and tie rods at Kenosha, Wisconsin.

J. L. Singleton

J. L. Singleton has been appointed manager for the 60 district offices of the Allis-Chalmers General Machinery Divison's sales department, announces William C. Johnson, vice-president.

Assistant manager of the steam turbine department prior to his appointment, Mr. Singleton joined Allis-Chalmers in 1926. He went to the West Allis works as assistant to the manager of the steam turbine department in 1942 and became assistant manager seven months later.

Associated Equipment Distributors, commonly known as A.E.D., has been forced to move to larger quarters. The association's new executive headquarters are at 1928 Eye Street, N. W., Washington 6, D. C.

The American Foundrymen's Association has announced plans to stage its 50th anniversary foundry congress and foundry show in the Cleveland Auditorium, Cleveland, next May. It is planned to stage the meeting as an international foundry congress, with attendance from foundrymen of England, France, Belgium, Russia, Mexico, South America, South Africa, Australia, China and other countries. If held, this will be the third international foundry con-

Above is a typical small Sauerman Scraper installation producing 40 to 50 cu. yd. an hour for a portable screening plant. Simple and dependable.

This Sauerman Slackline Cableway is moving gravel from a wet pit 90 ft. deep. It delivers material direct to screens at total cost of only few cents a cubic yard.

SAVE LABOR
by moving materials the SAUERMAN Way

Great savings in man-hours are made by using Sauerman Power Scrapers and Slackline Cableways in pit and bank excavation, stockpiling, stripping, and other material-handling jobs where the long operating range of these machines can be employed to advantage.

With one man at the controls, and with small expenditure of power, a Sauerman machine will dig, haul and automatically dump, a large hourly tonnage of any class of earth or bulk material. Moreover, price of equipment is moderate and upkeep is simple. Write for catalog.

SAUERMAN BROS., INC.
534 S. Clinton St., Chicago 7, Illinois

Power Scrapers & Cableways
SINCE 1909

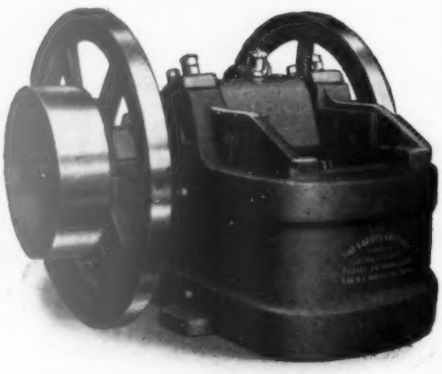
gress to which the American Foundrymen's Association has played host—the first being held in Detroit in 1926, the second in Philadelphia in 1934.

The Anderson Engineering Company has announced the removal of its factory and offices to its new location, with additional facilities, at 225-243 Bent Street, Cambridge, Massachusetts.

F. H. Hoge, who was formerly executive vice-president of the W. A. Jones Foundry & Machine Company of Chicago, has been elected president of the company, to succeed William Coleman, who resigned.

FARREL BACON CRUSHERS

Complete plants designed and equipped, including Screens, Elevators and Conveyors. Machinery for Mines and Rock Quarries, Sand and Gravel Plants. Engineering Service.



FARREL-BACON
ANSONIA, CONNECTICUT

To render better service to the mines and industrial plants in the West Virginia territory, Robins Conveyors, Inc., and its affiliate, the Hewitt Rubber Corporation, have opened a new office in the United Carbon Building in Charleston, West Virginia.

R. U. Jackson will be in charge of the office, assisted by H. N. Kepler. Handling Hewitt sales will be Nelson J. Reinhold.

F. E. Fairman

Francis E. Fairman, Jr., a former General Electric Company executive, has been named a vice-president of Food Machinery Corporation of Los Angeles. He will also be manager of the company's Peerless Pump Division. Mr. Fairman joined G.E. as a switchgear engineer at the Baltimore works in 1923. He was named assistant manager of the Switchgear Division in 1941.

Among newly-appointed distributors for the Gruendler Crusher & Pulverizer Company of St. Louis, Missouri, are the Shaw Sales & Service Company of Los Angeles and the Moore Equipment Company of Stockton, California.

Harvey A. Mylander was recently appointed Pacific Coast manager for the American Hoist & Derrick Company of St. Paul, Minnesota. He will head the company's offices in San Francisco, California.

J. F. Joy, formerly director of engineering for the Federal Machine and Welder Company, Warren, Ohio, has been elected vice-president in charge of engineering. Mr. Joy, an internationally-known figure in the engineering world, previously served the Office of Chief of Ordnance, Army Service Forces, where he received a citation from the War Department for developing an improved type of high-pressure packing.

Inventor of the Joy coal loader, which in 1922 became the first commercially applied continuous gathering mechanism for coal mines, Mr. Joy has headed several prominent companies manufacturing mechanized coal mining equipment.

Civilian peacetime business and employment at the Westinghouse Electric Corporation in the first three post-war years following reconversion promise to approximate 1941 levels, A. W. Robertson, chairman, has disclosed. Production in that year amounted to $369,094,000 and employment averaged 71,000, both figures being the highest in the company's history up to that time.

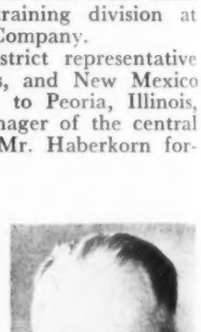
Mr. Robertson made public excerpts from a report to the company's employees on Westinghouse plans for changing from war to peacetime production, involving appropriations for improvements of more than $23,000,000 made since the first of the year and another $4,500,000 planned for the future.

C. A. Powel, manager of headquarters engineering at Westinghouse Electric Corporation, has been appointed by the War Department chief of the electrical and radio industries of Germany under the Allied Control Commission. Mr. Powel had toured Germany's electrical plants in 1938, to observe the latest advances in techniques and equipment. From 1905 to 1915 he had been associated with the Swiss electrical firm of Brown, Boveri & Company, and during World War I had served with the civil branch of the British Ordnance Department.

In his present position, he will make a survey of Germany's present electrical and radio manufacturing facilities, after which he will aid in drawing up a rigid control system for these industries.

F. D. Haberkorn has been made manager of the sales training division at Caterpillar Tractor Company.

J. W. Mohler, district representative in the Dallas, Texas, and New Mexico territory, will return to Peoria, Illinois, as assistant sales manager of the central division, a position Mr. Haberkorn formerly held.



Leon C. Hulse

Leon C. Hulse, formerly head of the termination department of Gar Wood Industries, Inc., has been named manager of the company's new plant at Mattoon, Illinois, which will fabricate road machinery and various heavy-duty truck bodies.

Since 1941 Mr. Hulse had been in charge of the gun carriage division to manufacture 75mm. and 105mm. howitzer carriages for the Army.

Lewis A. Harlow, formerly assistant advertising manager of Fairbanks, Morse & Company, recently became manager of the advertising division.

Thermoid Company, Trenton, New Jersey, announces the appointment of Walter B. Chick as a district manager of its Industrial Rubber Products Division in the Northwest Pacific Coast area.

Another recent appointment was that of Oscar Nuss as district manager of Thermoid's Industrial Rubber Products Division in the Southern California, New Mexico and Arizona areas.

PERFORATED METAL SCREENS
FOR SAND, GRAVEL STONE, ETC.

Manufactured exactly to your specifications.

Any size or style screen, in thickness of steel wanted with any size perforation desired.
We can promptly duplicate your present screens at lowest prices.
Prompt Shipment

CHICAGO PERFORATING CO.
2435 W. 24TH PLACE CHICAGO, ILL.
Telephone CANAL 1459

Trade Literature

The pieces of literature listed below can be obtained direct from the manufacturers named, or requests can be addressed to Pit and Quarry's "Service to Readers" Department.

REDUCE YOUR HAULING COSTS WITH TOURNATRAILERS. 4 pages. R. G. LeTourneau, Inc., Peoria, Illinois.

HOW TO TAKE A RECONVERSION INVENTORY OF YOUR V-BELT DRIVES. 5 pages.

HOW TO TAKE A RECONVERSION INVENTORY OF YOUR CENTRIFUGAL PUMPS. 4 pages. Allis-Chalmers Manufacturing Company, 575, Milwaukee, Wisconsin.

BULLETIN OP1502 ON MACHINE RUNNING TIME RECORDER. The Bristol Company, Waterbury 91, Connecticut.

HAYS INSTRUMENTS AND CONTROLLERS IN INDUSTRY. Bulletin 45-713. The Hays Corporation, Michigan City, Indiana.

IN WAR AND PEACE, PROGRESS STARTS WITH EXCAVATION. (Tractor equipment and ⅜ to 2½-yard shovels, cranes, draglines). Bucyrus Erie Company, South Milwaukee, Wisconsin.

NEW CATALOG ON FRACTIONAL-HORSEPOWER DRIVES. The American Pulley Company, Philadelphia 25, Pennsylvania.

BULLETIN ON MALONEY PNEUMATIC BOULDER BUSTER. Mallar Pneumatic Tool Company, St. Louis, Missouri.

NON-MAGNETIC APPLICATIONS FOR AMSCO MANGANESE STEEL. 31 pages. Bulletin 1144-NM. American Manganese Steel Division, American Brake Shoe Company, Chicago Heights, Illinois.

ELECTRIC TACHOMETERS TO MEASURE SPEED. 12 pages. General Electric Company, Schenectady, New York.

FLEXIBLE CONTOUR-FOLLOWING TRACTION. 6 pages. The Linn Manufacturing Corporation, Morris, New York.

FAIRBANKS-MORSE, FIGURE 6920, OIL LUBRICATED TURBINE PUMPS and FAIRBANKS-MORSE NIAGARA PROPELLER PUMPS, FIGURE 6310. Fairbanks-Morse & Company, Chicago 5, Illinois.

BAKER CABLE-CONTROLLED BULLDOZERS AND GRADEBUILDERS. 15 pages. Catalog 849. The Baker Manufacturing Company, Springfield, Illinois.

DIGGING FOR BURIED TREASURE. 8 pages. Caterpillar Tractor Company, Peoria, Illinois.

FRICTION MATERIAL CATALOG. Equipment Sales Division, Raybestos-Manhattan, Inc., Passaic, New Jersey.

CATALOG L-45-A. (Diesel-electric locomotives). 44 pages. H. K. Porter Company, Inc., Pittsburgh 22, Pennsylvania.

CATALOG B6051E. (V-belt drive). Allis-Chalmers Manufacturing Company, 575, Milwaukee, Wisconsin.

THE GENERAL TYPE 10. (Combination crane, shovel, dragline). 24 pages. General Excavator Company, Marion, Ohio.

FUEL INJECTION EQUIPMENT—GOVERNORS FOR DIESEL ENGINES, TYPE APE FUEL INJECTION PUMP, TYPE APF FUEL INJECTION PUMP, SPRAY NOZZLES AND NOZZLE HOLDERS. American Bosch Corporation, Springfield, Massachusetts.

CATALOG L. 32 pages. Bay City Shovels, Inc., Bay City, Michigan.

WELDORS GUIDE TO SUCCESSFUL HARD FACING. 31 pages. Mir-O-Col Alloy Company, Los Angeles 11, California.

HOW TO REPAIR TRACTOR PARTS BY ARC WELDING. 8 pages. GEA-3329, General Electric Company, Schenectady, New York.

EUTECTIC LOW TEMPERATURE WELDING RODS AND FLUXES. 4 pages. Eutectic Welding Alloys Company, New York City.

EUTECTIC LOW TEMPERATURE WELDING ALLOYS. 4 pages. Eutectic Welding Alloys Company, New York City.

MIRACLE WELDING PROCESS FOR MAINTENANCE. 6 pages. Eutectic Welding Alloys Company, New York City.

MATERIAL HANDLING EQUIPMENT. 24 pages. Catalog 45. Unit Crane & Shovel Corporation, Milwaukee 14, Wisconsin.

210—STREAMLINED PORTABLE COMPRESSOR. 6 pages. Worthington Pump & Machinery Corporation, Harrison, New Jersey.

GATKE BEARINGS. 68 pages. Brochure on Gatke moulded fabric bearings. Gatke Corporation, Chicago 1, Illinois.

LETOURNEAU EARTHMOVING AND CONSTRUCTION EQUIPMENT. 24 pages. R.G. LeTourneau, Inc., Peoria, Illinois.

LIGHT FROM FLOORS. 24 pages. Universal Atlas Cement Company, New York City.

ROTARY KILN OPERATION. 22 pages. Catalog N-OO-664(1). Leeds & Northrup Company, 4907 Stenton Avenue, Philadelphia 44, Pennsylvania.

DIRECTORY OF PRODUCTS AND ENGINEERING LITERATURE. 32 pages. Allis-Chalmers Manufacturing Company, 575, Milwaukee, Wisconsin.

ALL WHEEL-DRIVE TRUCKS. 4 pages. (Model MH440-4 and Model MH555-4. Marmon-Herrington Company, Inc., Indianapolis 7, Indiana.

BULLETIN. Crushers, grinders and shredders). American Pulverizer Company, St. Louis 10, Missouri.

FIVE INSULATING BRICK OF PRIME IMPORTANCE TO REFRACTORIES USERS. 14 pages. Harbison-Walker Refractories Company, Pittsburgh 22, Pennsylvania.

LUBRICATION. A technical publication devoted to the selection and use of lubricants as applied to cement mill machinery. The lubrication of each type of machinery is thoroughly discussed and illustrated by detailed drawings and cutaway views. The Texas Company, 135 E. 42nd Street, New York 17, New York.

THE BOGEY OF ECONOMIC MATURITY. *By George Terborgh. 263 pages. Published by Machinery and Allied Products Institute, Chicago, Illinois. Price, $3.00.*

Mr. Terborgh, who formerly was associated with the Brookings Institution and the Federal Reserve Board, analyzes a philosophy which he describes as a depression-bred theory that the American senile economy can no longer maintain itself without government support. He indicates the four major arguments of the economic maturity philosophy—declining population growth, the passing of the frontier, the dearth of great new industries, and the growing importance of depreciation reserves. After disposing of these factors, the author deals with stagnationist recommendations for public policy—the taxation of savings and deficit spending. He rejects both proposals and calls for measures to attain relative economic stability, a goal which he believes can and will be achieved.

The Spotlight IS ON

THE GILSON MECHANICAL TESTING SCREEN

The compact, ingeniously designed GILSON TESTING SCREEN assures a controlled product guaranteed to meet specifications. Test samples of crushed stone, gravel, slag, etc. are carefully sized through five test screens by a smooth and quiet vibration, separating 100 pounds of sample in 5 minutes or less. Eliminate errors that happen through "sizing by guess"—write today for complete information on the GILSON TESTING SCREEN.

THE GILSON SCREEN CO.
P. O. BOX 186 MERCER, PA.

Step up production—
move material *FASTER*
CON-VAY-IT *IT'S ELECTRICAL*

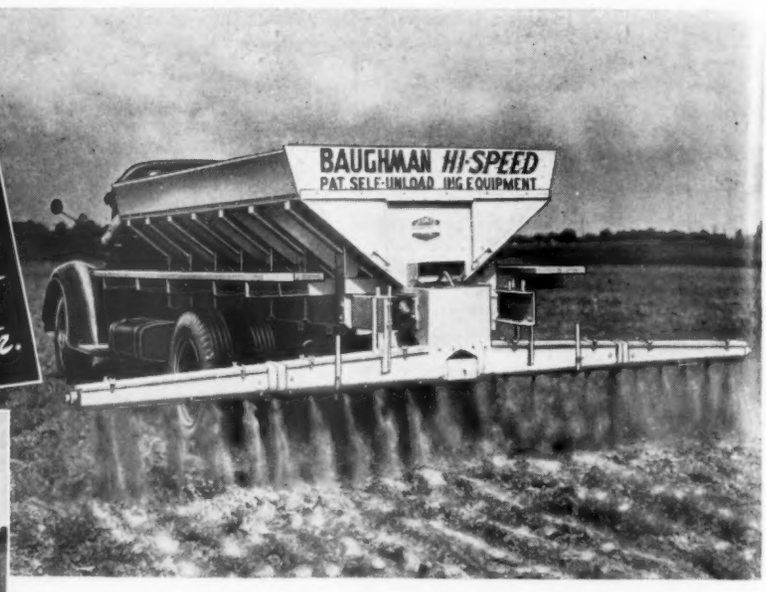
For moving ashes, cinders, grain, seed, sand, gravel, metal parts, aggregate, brick, clay, sawdust, chemicals, coal . . . all sizes.

Save countless man-hours by using this handy, husky portable belt conveyor. Simply plug into any wall outlet and CON-VAY-IT goes to work—clean, fast. Well engineered, ruggedly built to give long, low cost service. Four models: two belt widths—8 and 12 inch; two lengths—13 and 20 feet. For lifts too steep for a belt, use FLIGHT-VEYOR—four sizes to meet varying needs.

Distributors in principal cities of the United States and Canada

AMERICAN CONVEYOR COMPANY
1117 W. Adams Street, Chicago 7, Illinois
Please send bulletins on CON-VAY-IT and FLIGHT-VEYOR.
Name .....
Address .....
City & State .....

Make $7.50 to $15 an hour with the new Hi-Speed Special Attachment for Model K Machines—spreading phosphate at 15 miles per hr. for $1.00 to $2.00 per acre. Immediate Delivery. See our nearest distributor.



Patented and Patents Pending

Width of Spread
16½ feet

All-Steel
Welded Construction

Ball and Roller
Bearings throughout

Other Baughman "Hi-Speed" Equipment

Model K, Wide Chain Type Lime Spreader
Model C, Cinder and Chip Spreader
Model N, Dump Body Lime Spreader
Model F, Flat Bed Type Spreader
Model P, Phosphate Spreader (Wheel Type)
Phosphate Spreader Attachment for Model K
Motor or Farm Tractor Drive Spreader
Model J, Transfer Unloader or Dump
Model L, Car Unloader
Model M, Car Unloader

Ask for recommendations—we have a reliable distributor near you.

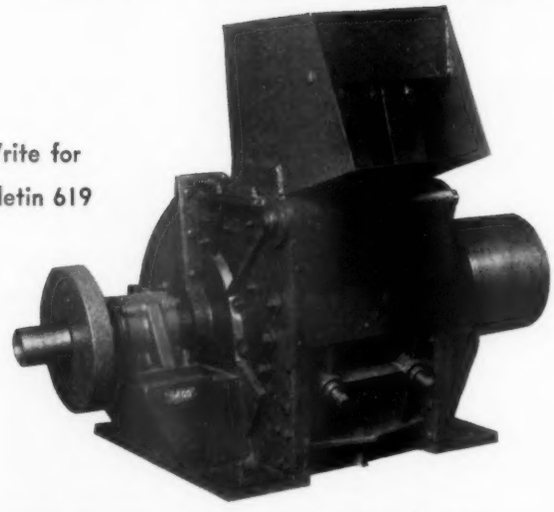
manufactured exclusively by
BAUGHMAN MANUFACTURING CO., Inc.
Factories • JERSEYVILLE, ILLINOIS

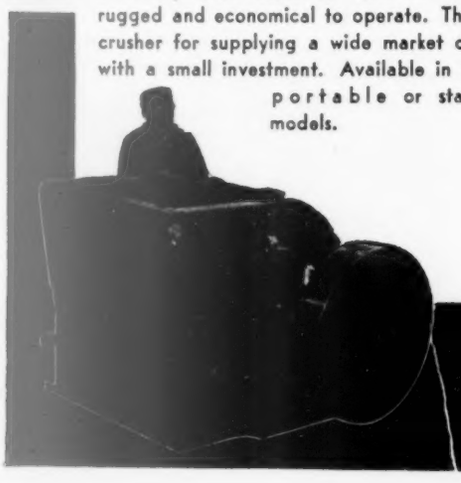
1 CRUSHER . . . the WILLIAMS "SLUGGER"

reduces **"ONE-MAN"** size stone to 1¼", ¾" or agricultural size in **ONE OPERATION**

Here's the all-purpose hammer type pulverizer for crushing agricultural limestone, concrete and road stone. WILLIAMS "Slugger" provides continuous, high-capacity production of uniformly sized material. Unit is extremely rugged and economical to operate. The ideal crusher for supplying a wide market demand with a small investment. Available in 7 sizes, portable or stationary models.

Write for Bulletin 619





The Williams Patent Crusher and Pulverizer Co.
802 St. Louis Ave. St. Louis 6, Mo.

OLDEST AND LARGEST BUILDERS OF HAMMERMILLS IN THE WORLD
Williams
PATENT CRUSHERS GRINDERS SHREDDERS

AIR SEPARATORS
ROLLER MILLS
CRUSHERS
GRINDERS
SHREDDERS

LAY·SET'S GREEN·LUBE MAKES IT STILL BETTER

• *GREEN-LUBE is a superior grade lubricant made to our own specifications. It clings to the wires longer—protects them better—enables them to give increased service.*

HAZARD'S All-Green rope is **LAY•SET** Preformed made of Improved Plow Steel—the best rope. Now this rope is still better, because it is completely protected with GREEN-LUBE. Every strand is pressure-packed with our new superior green lubricant which gives added life to every wire. Not a single strand, not two strands, but every strand—yes, even every individual wire is completely covered by GREEN-LUBE. The all-green color is an added protection to the highest grade rope made: **LAY•SET** Preformed I. P. S. Use only Hazard's All-Green rope.

ACCO

Wilkes-Barre, Pa., Atlanta, Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Tacoma, Bridgeport, Conn.

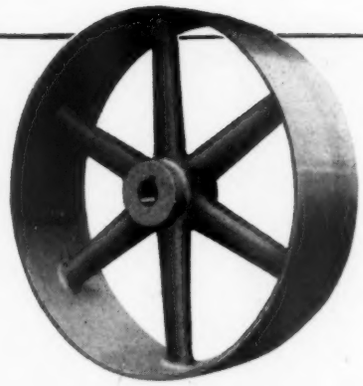
HAZARD WIRE ROPE DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

In Business for Your Safety

High test cast iron pulleys in all sizes and types

Completely split pulley

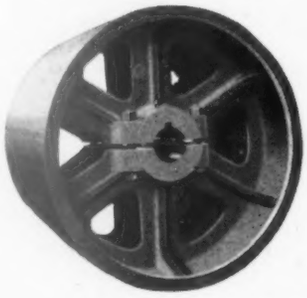


Single arm solid pulley

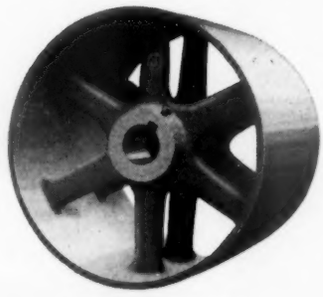
JONES cast iron pulleys are true running — they permit higher speeds — no bushings and they can't fall apart — they don't rattle and they look better on most machines.

These pulleys are machine molded, poured of high test cast iron, and are accurately finished and balanced. Multiple piece pulleys, rubber covered pulleys and flywheels can be furnished.

W. A. JONES FOUNDRY & MACHINE CO.
4441 Roosevelt Road, Chicago, Illinois



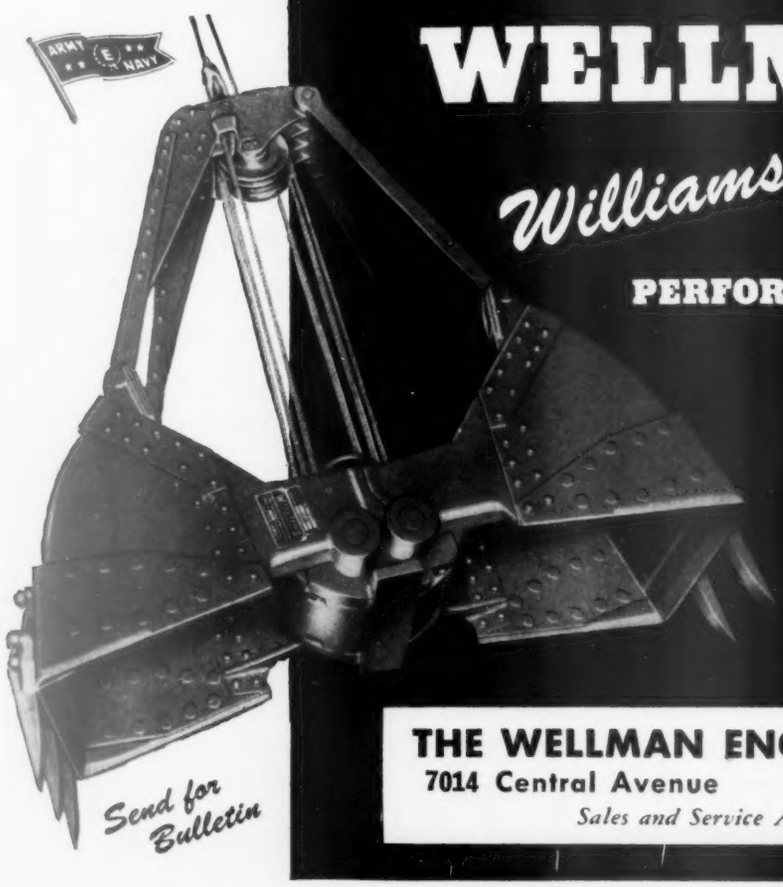
Extra heavy conveyor pulley



Double arm pulley

Jones

HERRINGBONE — WORM — SPUR — GEAR SPEED REDUCERS • PULLEYS
CUT AND MOLDED TOOTH GEARS • V-BELT SHEAVES • ANTI-FRICTION
PILLOW BLOCKS • FRICTION CLUTCHES • TRANSMISSION APPLIANCES



Send for Bulletin

WELLMAN

Williams BUCKETS

PERFORM BETTER *Longer*

Multiple Rope and Power Arm Types · Dragline · Power Wheel · Special Service Buckets · ⅜ to 16½ yd. capacities.

WELDED ROLLED STEEL CONSTRUCTION FOR LOWER MAINTENANCE, LONGER LIFE . . .
Formerly featured only in Wellman custom-built buckets — now in *every* Wellman-Williams Bucket.

THE WELLMAN ENGINEERING COMPANY
7014 Central Avenue • Cleveland 4, Ohio
Sales and Service Agencies in Principal Cities

NEW LEADER Truck Body Type

LIME SPREADERS

Can Now Be Purchased Without Triple AAA Certificates or Priority

THE above picture shows a rear view of the new model NEW LEADER marl and lime spreader. This spreader is equipped with an extra wide conveyor and two distributor discs and is strictly a one-man spreader. You will be able to haul wet lime or marl and, due to the large opening in the back end of the spreader, material will always feed onto the distributor disc evenly.

This spreader has many outstanding features. Both gear boxes driving the distributor discs are equipped with cut steel gears and ball-bearings running in a dust-proof and oil-tight gear case. The large gear box driving the wide chain conveyor is equipped with a steel ring gear and pinion and a thrust bearing also running in a dust-proof and oil-tight gear case. Bearing hangers are placed underneath the distributor discs; these are also equipped with ball bearings. This helps to carry the weight of the distributor discs and the load, the weight not being suspended from the gears in the small gear box. With this arrangement you are assured longer lived gears. The framework of the spreader is of hardwood.

These spreaders can now be purchased without priority or certificates of any kind. Write us for any additional information, also prices.

HIGHWAY EQUIPMENT COMPANY, INC.

Manufacturers of the World's Most Complete Line of Spreaders, Including Lime Spreaders, Sand and Cinder Spreaders, Chip Rock, Clay and Dirt Spreaders.

CEDAR RAPIDS, IOWA, U. S. A. **Phone 32017-32018**

*Lightweight**

BUT—

—IT DOES A MAN-SIZE JOB!

- ★ 20% TO 40% LIGHTER THAN OTHER BUCKETS, type for type.
- ★ ALL WELDED CONSTRUCTION for greater strength and durability.
- ★ MANGANESE STEEL chains, fittings, and reversible tooth points.
- ★ GETS FULL LOAD PAY MATERIAL EVERY TRIP—even in wet digging.
- ★ PERFECTLY BALANCED—handles easier, fills faster, dumps cleaner.
- ★ LARGER BUCKET CAN BE USED ON SMALL MACHINE—or on a long boom.
- ★ THREE TYPES—light, medium and heavy duty, ⅜ to 30 cubic yard size.

Also Available Without Perforations

Write for descriptive literature—or ask your dealer.

HENDRIX *Lightweight* **DRAGLINE BUCKETS**

DESOTO FOUNDRY, INC. • MANSFIELD, LA.

Fast TRIPLE SIZING on this

SIMPLICITY 3-deck SCREEN III

SIMPLICITY 5' x 10' 3-deck Screen making three sizes of gravel at the Pierce Island plant.

Speed and accuracy, combined with working dependability and low-cost operation, assured the selection of SIMPLICITY Screens to handle most of the sizing work for the Pierce Island Gravel Company of Portland, Oregon.

This firm furnished aggregates for the construction of the great Bonneville Dam in the lower Columbia River valley.

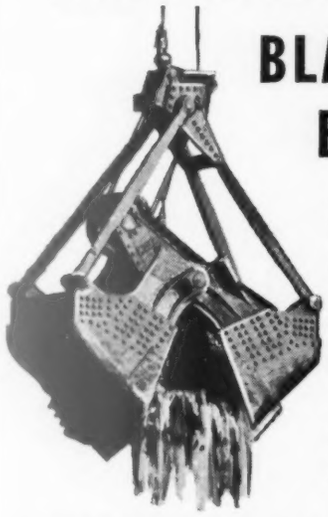
The Pierce Island plant now supplies large amounts of sand and gravel to general contractors and road builders . . . uniform products screened on SIMPLICITIES.

Write for Information

SIMPLICITY ENGINEERING CO., Durand, Michigan

YOU ALWAYS GET

PEAK PERFORMANCE FROM



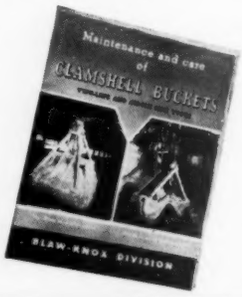
BLAW-KNOX BUCKETS

Every Blaw-Knox bucket is designed for a specific purpose—the greatest output from your crane.

★

BLAW-KNOX BUCKETS in over 100 types and sizes are illustrated and described in Catalog 1757 . . . send for your copy today.

BLAW-KNOX DIVISION
of Blaw-Knox Company
2004 FARMERS BANK BLDG.
Pittsburgh, Pa.
New York • Chicago • Philadelphia
Birmingham • Washington
Representatives in Principal Cities

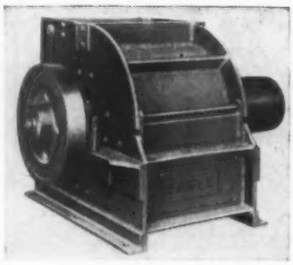


MAKE 'EM LAST

Bulletin 2004 gives complete instruction on the Care and Maintenance of Clamshell Buckets . . . copy on request.

MORE Crushing Efficiency FOR YOUR MONEY!

It's a PULVERIZER



EAGLE DUAL — PURPOSE CRUSHER

It's an IMPACT BREAKER

DON'T WASTE ROCK WASTE!

. . . process it through an EAGLE Pulverizer and make *extra* profits from agricultural limestone.

This EAGLE unit is easily adjusted to produce high quality crushed stone for highway and general construction.

Available in several sizes — all models extremely economical to operate and maintain.

Territory open for responsible distributors

EAGLE CRUSHER CO., INC.
Galion, Ohio

Write for Bulletin

EAGLE

JAW CRUSHERS
IMPACT BREAKERS
PULVERIZERS
CONVEYORS
LOADERS

December, 1945

The CONCRETE MANUFACTURER

A Special Section of...

Performance
Speaks Louder than Words
(ASK ANY STEARNS OWNER)

A Few of Hundreds:

HARTFORD CONCRETE UNITS, Hartford, Conn.
Two No. 9 Joltcretes

CONCRETE PRODUCTS CO., South Bend, Ind.
One No. 9 Joltcrete
One No. 7 Joltcrete

GRAY CONCRETE PIPE CO.
Hagerstown, Md.
One No. 9 Joltcrete

9 to 11

—that's the number of perfect 8-inch blocks

STEARNS *Improved** JOLTCRETE No. 9

will produce PER MINUTE !

- *One-man operation* adds to profit margin — slashes production costs.
- *Lowest in maintenance cost:* few working parts, few wearing parts, lower replacement costs.
- *Makes all sizes and shapes* of blocks. Mold box changes are quickly made.
- *Uses cored pallets* with all their advantages.
- *Lowest in first cost,* including pallets, of any comparable machine.

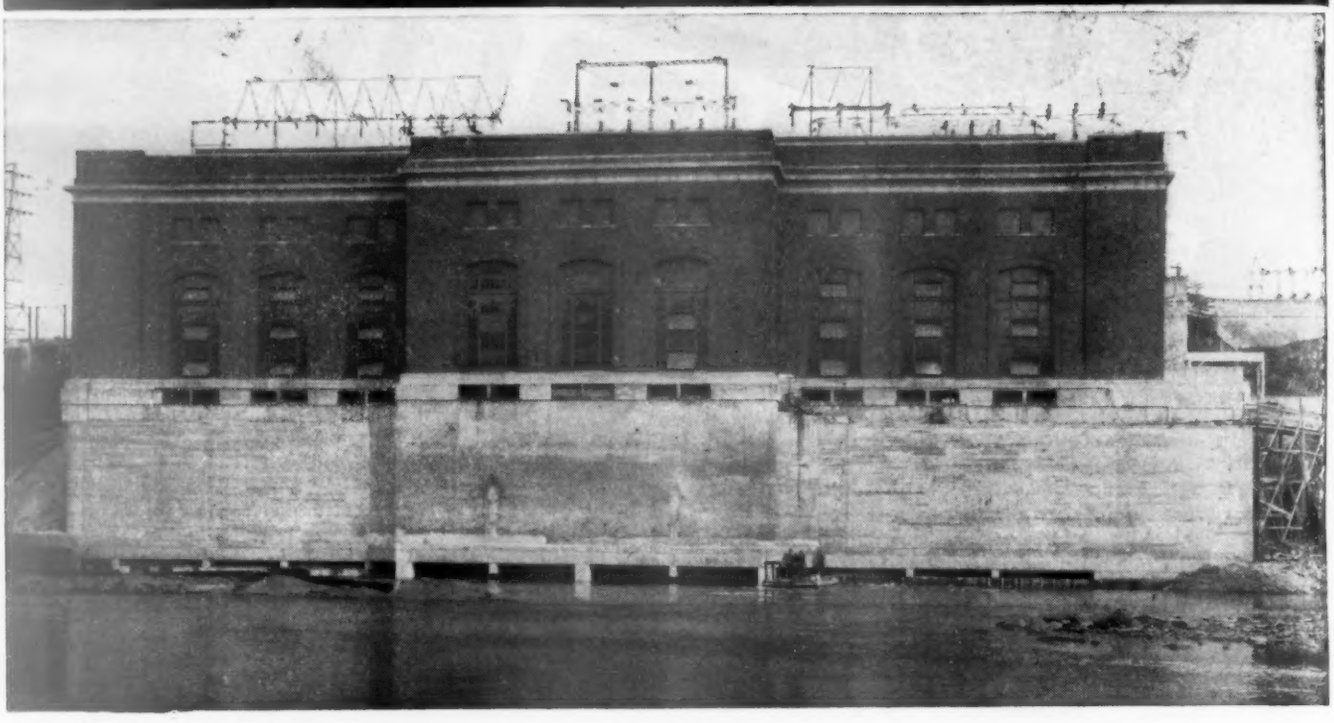
Write for new Joltcrete folder illustrating and describing the details of No. 9 and No. 7 — a model of smaller capacity.

* *Recent Improvement:* Automatic carriage drive mechanically delivers blocks to Offbearer. Power Offbearer conveys blocks to racks. Both eliminate hand labor. Like all Stearns improvements, these can be added to present Joltcretes.

STEARNS
STEARNS MANUFACTURING CO., INC., ADRIAN, MICH.
GENE OLSEN, PRESIDENT

Pioneers in the design and manufacture of modern concrete products plant machinery: Vibration and tamp-type blockmakers . . . Mixers . . . Material handling Skip Loaders.

Structural Repairs at Hydro Station Made with Duraplastic Air-Entrained Concrete



Duraplastic air-entrained concrete was used for repairs at hydroelectric station of Western Massachusetts Electric Co. H. A. Moody, Hydraulic Engineer; Concrete furnished by Construction Service Corp., Springfield, Mass.; Daniel O'Connell's Sons, Inc., Holyoke, Mass., contractor.

FREEZING and thawing action during 28 New England winters developed spalling of the turbine scroll cases at a hydroelectric station of Western Massachusetts Electric Co.

New concrete curtain walls were constructed with Atlas Duraplastic air-entraining cement.

The engineer states that—

1. There was practically no segregation in the mix.

2. There was no appreciable water gain on top of the concrete walls after all the concrete had been placed in one continuous operation.

3. When the forms were removed, the surface was free of "honeycomb" spots and sand streaks.

For further information on Duraplastic, write to Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

OFFICES AT: New York, Chicago, Pittsburgh, Cleveland, Philadelphia, Albany, Boston, Des Moines, Minneapolis, Duluth, Waco, St. Louis, Kansas City, Birmingham.

ATLAS DURAPLASTIC

TRADE MARK REG. U. A. C. CO.

AIR-ENTRAINING PORTLAND CEMENT

Makes Better Concrete at No Extra Cost

PC-D-23

SUNDAY EVENINGS—American Broadcasting Company (Blue) Network—U. S. Steel's "The Theatre Guild on the Air"

The CONCRETE MANUFACTURER

DECEMBER, 1945

Vol. 9 No. 6

A MAGAZINE DEVOTED TO PRODUCTION OF CONCRETE PRODUCTS AND READY - MIXED CONCRETE

CCA

Published by Pit and Quarry Publications
538 South Clark St. Chicago 5

H. W. BAUMGARTNER
President

STANLEY A. PHILLIPS
Vice-President and Directing Editor

WALTER E. TRAUFFER
Editor

HARRY F. UTLEY
Pacific Coast Editor

WILLIAM M. AVERY
Field Engineering Editor

M. E. ANSEL
Associate Editor

FLOYD C. LEVERETTE
Assistant Editor

W. T. KLUSSMAN
Secretary

RAY L. SMITH, JR.
Circulation Manager

CHICAGO BUSINESS OFFICE
538 South Clark Street
Chicago 5, Illinois
Telephone HARrison 8558

JAMES E. MONTGOMERY
Advertising Manager

EARL C. KAYE
Representative

RUSSEL L. MILES
Field Manager, Pit and Quarry Handbook

NEW YORK OFFICE
Room 1235, 101 Park Avenue
New York 17, New York
Telephone CALedonia 5-4438

W. A. WILSON
Eastern Advertising Manager

CHARLES H. BUSSMANN
Assistant

CLEVELAND OFFICE
712 The Arcade
Cleveland 14, Ohio
Telephone CHerry 4432

D. R. EGBERT
Central Advertising Manager

PACIFIC COAST OFFICES
318 North Lockheed Avenue
Whittier, California
Telephone 42-2701
HARRY F. UTLEY

1007 Terminal Sales Building
Portland 5, Oregon
J. A. CONVERSE

Domine Expansion To Double Size of Present Layout

Domine Builders Supply Company, Inc., Rochester, New York, manufacturer of concrete masonry units and brick, has begun construction of a $250,000 plant which will double the size of the present facilities and allow the firm to increase its output of block and other building materials. Harry H. Black, secretary and general manager, outlined preparations for the large construction business expected to begin next spring. The new plant will be completed about February 1. New facilities will include two Besser Super Vibrapacs and equipment for high-temperature steam curing.

The company, founded in 1911 by H. P. Domine, president and treasurer, is at least two months behind in its orders, according to officials. The sales market when the new building is completed, will cover an area of 150 miles around Rochester. The personnel of the entire plant will be about doubled.

T. J. Kauer Appointed To New Office

On November 1, T. J. Kauer assumed his new duties as managing director of the Wire Reinforcement Institute of Washington, D. C. Previously Mr. Kauer had been assistant managing director of the American Concrete Pipe Association. He represented the association in Washington from 1941 until his recent promotion. During this period he also served there for a time as an airport paving engineer with the Civil Aeronautics Administration.

Nisei Unit Praised By Col. Mashbir

Since the appearance of a photograph featuring Col. Sidney F. Mashbir in the October issue of PIT AND QUARRY (page 60), an interesting piece of information has been revealed. Colonel Mashbir, the organizer of the Scientific Concrete Service Corporation of Washington, D. C., released through Allied headquarters sources in Tokyo the story of a highly secret U. S. Army unit, composed principally of young Japanese-Americans, which he formerly commanded.

"No group in the war had as much to lose," said Colonel Mashbir. He added that some of the Nisei were among the defenders of Corregidor and that many in the group had been decorated for exceptional feats performed by this unit.

$35,000 Florida Plant Begins Production

A new transit mix concrete plant erected by Clyde J. Keys has begun production at St. Petersburg, Florida. The 60-ton batching hopper, built over a depressed ramp, is one feature of the rapid-handling facilities of the $35,000 layout.

Consumers Sand & Gravel Loses Richard Klepper

Richard Klepper, manager of the ready-mix operations of the Consumers Sand & Gravel Company, Kalamazoo, Michigan, died on November 8, aged 49 years.

The firm of Clausen, Olson & Bender of Holdrege, Nebraska, announces that it will soon open a new concrete block plant with a capacity of 1,000 blocks per day. Meanwhile, production is carried on in a temporary structure.

Coming Events

January 23-25, 1946—Cincinnati. Annual convention, National Ready Mixed Concrete Association, Netherland Plaza Hotel.

January 27-31, 1946—Chicago. Annual meeting. Associated Equipment Distributors, Edgewater Beach Hotel.

March 12-14, 1946—Chicago. Annual conference. National Concrete Masonry Association, Sherman Hotel.

February 25-March 1, 1946—Pittsburgh. Spring meeting. American Society of Testing Materials.

June 24-28, 1946—Buffalo. 49th annual meeting and seventh exhibit of testing apparatus and related equipment. American Society of Testing Materials.

Public Works Dept. Of N. Y. Releases New Specifications

The Department of Public Works of the State of New York has recently adopted new specifications covering the use of concrete masonry units. These specifications are applicable to all public buildings constructed by the State of New York. The specifications are quoted as follows:

Hollow Concrete Blocks shall be made of Portland cement and lightweight aggregates such as cinders, haydite or blast furnace slag. The blocks shall be supplied by a manufacturer whose facilities have been inspected and approved by a representative of the New York State Department of Public Works. Load-Bearing units shall conform to the requirements of A.S.T.M. Specifiation C-9044 for Grade A units. Non-Load-Bearing units shall meet the requirements of A.S.T.M. Specification C129-39. Concrete masonry units shall be sampled and tested in accordance with A.S.T.M. Specification C140-39.

Concrete masonry units may be either high-pressure steam cured at a pressure of not less than 120 pounds per square inch or more than 150 pounds per square inch, for at least 8 hours; or high temperature steam cured at a minimum temperature of 180 degrees F. for at least 12 hours.

Prior to the delivery of concrete masonry units to the building site by an approved manufacturer, the contractor shall furnish to the state architect a certificate from an approved testing laboratory to the effect that materials set aside for delivery to the project meet the requirements of these specifications. The cost of the preliminary tests shall be borne by the manufacturer. Subsequent tests will be made by the state from samples taken at the job and if these tests show that the units fail to meet the specifications, all shipments may be rejected.

The opening of these specifications to low-pressure steam-cured units was made possible by a hard-working group of producers in New York State. While the specifications are more rigid than standard A.S.T.M. requirements, they do conform to the trend of manufacturing practice in the industry.

U. S. Govt. Publication Features Block Industry

A recent publication of the U. S. Department of Commerce and the U. S. Department of Agriculture entitled *Will Making Concrete Block Pay in Your Community?* Explains the uses and manufacture of concrete block, discusses post-war prospects of the industry, and gives practical suggestions for the establishment of new plants. The bulletin may be secured by applying to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The price is 15 cents per copy.

J. S. H. Tracy Joins Staff Of Two Seattle Concerns

Lieut. Comdr. Jack S. H. Tracy, who returned to Seattle, Washington, after 44 months of active duty in the United States Navy, has become associated with the management of the Bremerton Concrete Products Company and the Kenyon Materials Company, both affiliates of the Graystone Concrete Products Company of Seattle.

P. C. A. Publishes Folder On Block-Built Garages

Considering the current garage shortage—most wartime houses having been constructed without garages—the Portland Cement Association anticipates that the coming demand for thousands of automobiles will bring a corresponding boost in home garage building. It has therefore published a timely 4-page booklet on *The Home Garage,* which features concrete masonry construction.

Rapid Reconversion Made By J. C. Boyer Company

The J. C. Boyer Company of Greenfield, Indiana, formerly engaged in manufacturing concrete practice bombs, has completed reconversion to peacetime production. The firm has resumed the manufacture of concrete blocks, reinforced concrete fence posts and other similar items.

Mans Colglazier Plant To Make 240 Units Hourly

Mans Colglazier & Son have begun construction on a new concrete block manufacturing plant near Salem, Indiana. A concrete block structure will house the machinery, which is new and of the latest design. It is expected that the plant will have a capacity of 240 concrete blocks per hour when completed.

Claude C. Wood of Lodi, California, has announced the establishment of a ready-mixed concrete plant, to be erected there immediately. Mr. Wood expects to serve increasing post-war building needs in the Lodi area.

Block Manufacturer Rescued from Pit By Sons' Efforts

Because of the clearheadedness and resourcefulness of two small boys, Arthur and Bobby Groner aged seven and six, their father, Theron Groner, escaped certain death near Bellevue, Michigan recently. Mr. Groner, owner of a concrete block business, had gone to a gravel pit for a load of material. The boys were playing in a sand pile nearby. A cave-in started in the pit and caught the father, pinning him to the ground, but he managed to shout to the boys before his head was covered.

Arthur sent Bobby for help, and he himself dug until he had freed his father's head. Until Bobby arrived with help, Arthur kept the loose gravel from suffocating his father. The boys had remembered well the instructions Mr. Groner had given them in anticipation of such an emergency.

Expansion Plans Made By New Plant Owners

Plans for expanding the Choctaw, Alabama, plant of Louisiana Concrete Products, Inc., recently were announced by A. E. Lloyd and G. C. McCullough, who purchased the plant for $75,000 from G. W. McDearmon. Several high - pressure kilns and overhead storage bins will be added, and machinery will be installed for making precast concrete joists and roof tile. It is estimated that the capacity of the plant will be quadrupled.

Homer Bergren Returns To Old Graystone Job

The Graystone Concrete Products Company of Seattle, Washington, announces the return of Lt. Comdr. Homer Bergren to his former position with the company after completing a 4-year tour of duty with the United States Navy. While resuming his duties as treasurer and trustee, Mr. Bergren will devote a portion of his time to the activities of the concrete products and ready mix plants associated with Graystone.

R. W. Sidley has announced the opening of a silica block plant at Bainbridge, Ohio.

Promoting the Farm Market for Concrete Products

By WILLIAM M. AVERY

PART I

WITH the process of restoring the nation's economic structure to a peace-time basis already well under way, one of the important problems which now confronts the concrete products industry is the retention of the new markets which were created during the war years. In potential year-in-and-year-out volume of demand, the most promising of these comparatively new outlets is the farm market, which fell like a ripe plum into the lap of the products industry largely because of the critical shortage of other types of building materials.

It is unquestionably true that the industry will automatically and without effort retain some portion of this market, for many farmers have by actual experience discovered the unique suitability of concrete as a permanent, fireproof, rot and vermin-proof, highly-sanitary and low-cost material in the construction of farm buildings. But if this challenging market is to be expanded, as it can be, to become an important factor in stabilizing demand and in utilizing even the present productive capacity of the industry, it must be evident to all but the most inveterate stand patters that some positive and concerted promotional effort must be put forth.

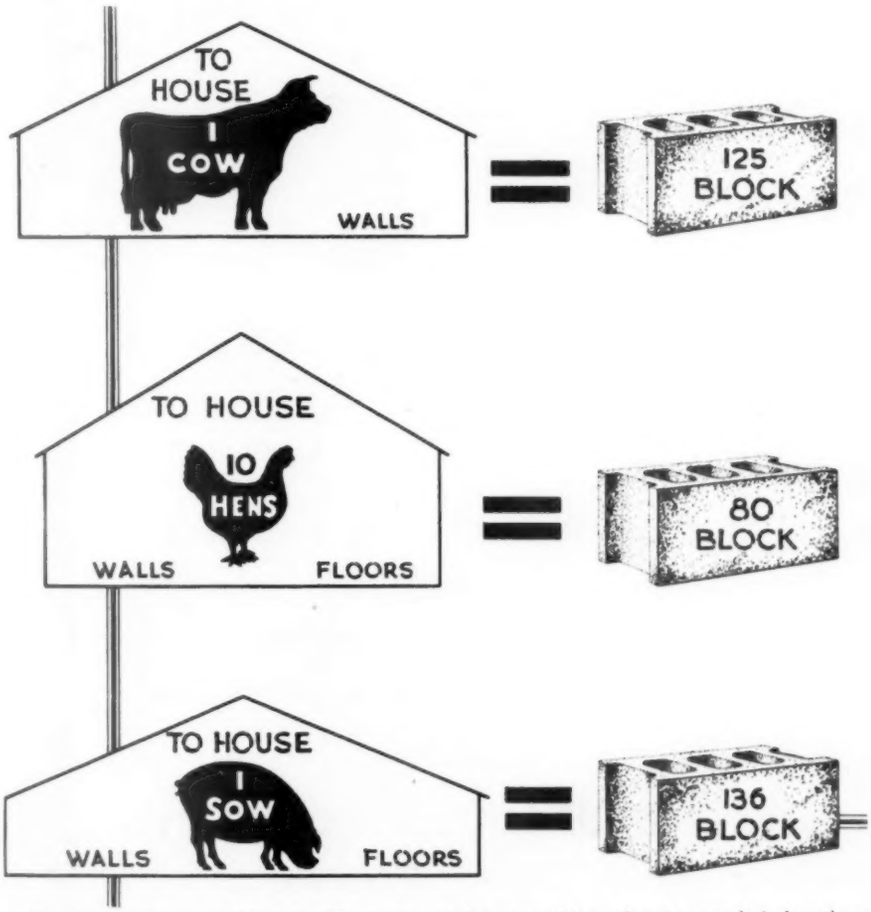
With this end in view, the Portland Cement Association some months ago prepared for distribution among products manufacturers a portfolio entitled "A Plan to Help You Merchandise Concrete Masonry in the Farm Market." In the forceful, non-technical language which happily characterizes P. C. A. publications, the plan covers four major types of promotional activity; newspaper ad proofs and publicity stories; direct mail leaflets and sales letters; farm building plan service; and farm construction booklets for follow-up selling. It is not in any sense an abstract or theoretical discussion of promotional advertising, but on the contrary offers innumerable specific examples to enable any producer, however small or large his business may be, to launch a program tailored to suit his individual requirements and the means at his disposal.

The editors of THE CONCRETE MANUFACTURER, in the course of their extensive travel throughout all sections of the country have talked with a number of products makers who have on some scale employed the material furnished by the P.C.A. Without exception they are enthusiastic about the results which have been obtained, often in return for what seemed the very minimum of effort. But if the potentialities of the farm market are to be realized to any significant extent it is evident that promotional effort must be put forth on a much larger scale and over a vastly wider area than has been undertaken in the past. To help bring this about and to cooperate with the P. C. A. in encouraging individual producers to widen their local markets through the medium of promotional advertising, in this and in succeeding issues of The Concrete Manufacturer the various phases of the four-part plan will be presented in condensed form.

Business Building Advertising

Persistent advertising is one effective way of bringing products and firm names to the attention of farmers. Through the war years farmers have bought concrete products largely because lumber and other building materials were not available, but within a very few months normal competitive conditions will have been restored. Without constant reminders of the availability of concrete products and their superiority over other materials, the farmer will inevitably tend to revert to some extent to his pre-war buying habits. One of the best media through which to convey these reminders is regular advertisement insertions in local newspapers.

To assist in this problem, the P. C. A. has developed a group of newspaper advertisements aimed directly at the farmer. The mats are furnished with adequate blank space for the addition of the name, address and telephone number of the products company. By arrangement with the newspaper this information can be set in any size of type de-



Concise and eye-catching is this poster giving quantities of units needed for three indispensable farm buildings.

sired. Both one- and two-column advertisements are included in the series.

The cost of this form of advertising will vary considerably with the size and the circulation of the newspaper employed. In most cases much lower rates may be obtained by contracting for a number of insertions. While a one-time insertion is better than none at all, constant repetition is one of the primary factors in effective advertising, and the ultimate objective is in all cases to identify closely the firm's name with the product, and the product with the need it fulfills.

The results of such advertising are not always fully tangible and it is a serious mistake to suppose that a balance sheet can be made to show on one side the cost and on the other the direct yield in dollar volume of business. Over a considerable period of time, however, the effectiveness of an advertising program will be revealed in some measure by the number of inquiries and requests for prices received. New customers will often volunteer the information that their inquiry resulted from seeing the firm's advertisements, and in some cases this information may be gained by tactful questioning. If more than one advertising medium is being employed, it is a good plan to keep a record of such information, if for no other reason than to know what phase of the over-all program should be curtailed first in the event that retrenchment becomes necessary.

A far too common mistake in advertising is to stop altogether when business is poor. Usually this step is taken in order to eliminate what seems to be an "unnecessary" expense. To pursue this highly-illogical argument to its logical conclusion, it would seem to be no less advisable under such conditions to have the telephone removed, to close the office, and, eventually, to go out of business altogether. Too often that is exactly what happens. It is equally poor reasoning to suppose that, because business is good, there exists no valid reason for advertising, and this is the position many producers have taken during the war years. There is a close analogy here with the farmer who couldn't repair the leak in the roof of his barn when it was raining and who wouldn't make the repairs during dry weather because it seemed unnecessary. Products makers have had comparatively easy sailing throughout the war period, and many seem to have quite forgotten that there was ever a time when their principal problem was *not* how to produce blocks but how to *sell* them. It is entirely probable that during the next few years production will continue to be a somewhat more pressing problem than selling, but the cycle will inevitably be reversed, and now—today—seems an excellent time to recultivate the gentle science of wooing customers instead of avoiding them.

There is another way in which local newspapers can assist concrete products manufacturers to increase their rural business. Many newspapers with large rural circulations feature a special farm page, and the news items that appear on it carry far more weight than any paid advertisement. Editors are constantly searching for usable news stories with which to fill such pages, and they will generally welcome assistance from promotion-minded local business men. Stories concerning interesting farm construction jobs employing a local producer's block make excellent copy and are certain to be read by farmers. It is well to furnish the editor with several clear snapshots showing the results that were accomplished so that he may select the one most suitable.

The P. C. A. portfolio includes

(*Continued on page 112*)

CONCRETE MASONRY
READY FOR FARM USE
NOW!
Needed farm building jobs can be done NOW with CONCRETE MASONRY.
Restore weak foundations, build sanitary, vermin-proof, firesafe farm improvements with this non-critical material.
Telephone, write or call on us for free estimate.
NAME OF PRODUCTS COMPANY
Address
Telephone

Attention-compelling effect of simple sketches is demonstrated in this cut-away illustration.

New System Speeds Block Handling At General Concrete Products Co.

Fig. 1. A power-operated unit ready to carry a load of blocks to the curing yard.

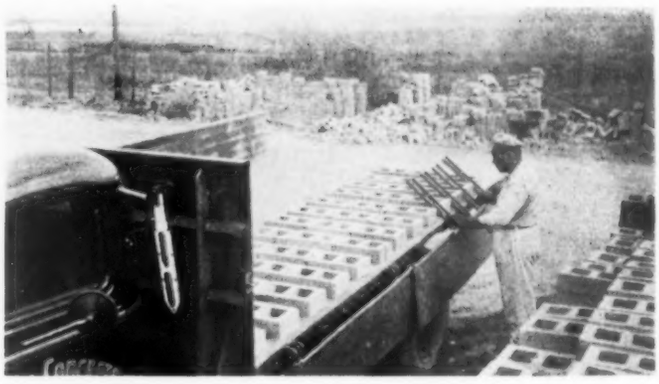


Fig. 3. The layer of blocks being laid in the truck by hand, to insure accurate spacing.

another ON THE SPOT report

By HARRY F. UTLEY

A LEADING supplier of concrete blocks in California's San Fernando Valley, the General Concrete Products Company of Van Nuys, has recently speeded up the handling and delivery of its product to a surprising degree at the same time eliminating many man-hours of labor.

One of the machines which has helped to accomplish this is a Scoopmobile, a power-operated unit in which the conventional scoop has been replaced with a special 4-tined lifting fork. As the blocks are stacked on skids by an off-bearer at the block machine, the first labor-saving operation performed by the fork-lift truck is to carry the loads (Fig. 1) to the curing yard.

After the units are cured and removed from the pallets they are hand-stacked by a special method devised by Ed Ripley, head of the company, with spacer blocks at the bottom to allow the forks of the Scoopmobile to reach beneath the stack to lift and transport the blocks, as seen in Fig. 2. The stack being handled here consists of 140 of the company's 4- by 8- by 12-inch units; with 4- by 6- by 12-inch units, the other popular size produced in the plant, there are 168 to a stack.

Fig. 2. The prongs of the lift-fork reach under the stack of blocks.

The stacks of blocks are hoisted and moved to the delivery trucks by the machine. These trucks are flat-bed dump units and the bottom layer of blocks is first placed on the truck bed by hand, accurately spaced as illustrated in Fig. 3 so as to admit the forks of the lift-truck. The spacer bars being used by the workman are made to the same dimensions as the forks on the lift-truck.

Fig. 4 shows a truck being loaded, six lifts being required for a capacity load. Before the system was inaugurated it took two men one hour to load a truck by hand. The Scoopmobile method requires only 20 minutes and this is expected to be cut to 15 minutes or even less as the men become more experienced, Mr. Ripley believes.

A still greater saving in time and labor is effected at the unloading point. The truck-body sides, shown dropped for loading in Figs. 3 and 4, are afterward raised and unloading at the site is quickly accomplished as illustrated in Fig. 5. As the body is slowly hoisted, the units slide off by gravity, the special tailgate reducing

Fig. 4. Six lifts make up a capacity truckload after the first layer is in place.

Fig. 7. Another application—adrag has been attached for smoothing and clearing runways.

the angle of discharge so that the units are deposited gently on the ground. During unloading, the brakes are released and the truck

Fig. 5. Truck body raised to discharge load of blocks. The units slide off so gently that there is very little breakage.

moves forward slightly as the weight of the blocks shifts toward the end of the chassis and they slide off. While difficult to believe, there is practically no breakage in unloading; in fact there are fewer blocks damaged than when unloaded by hand, Mr. Ripley reports.

About 5 minutes after arrival at the unloading point the truck is empty and ready to return to the plant, in contrast to the 1½ hours it formerly took the truck driver to unload by hand. As a result of this

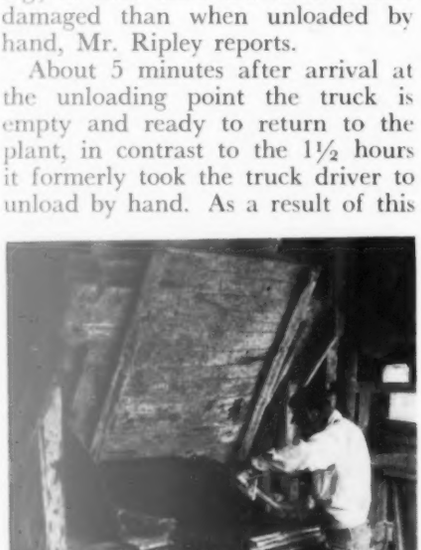


Fig. 6. The vibrating table and the stripping press.

and the time saved in loading with the Scoopmobile, the truck is able to make two or three more deliveries daily than was formerly possible. An intangible but none-the-less important advantage in these days of labor scarcity is that the truck driver is happier and better satisfied with his job since the new method eliminates a lot of hard labor.

At the plant the concrete is mixed in a revolving mixer charged by a skip. Units are produced on a Flam "Challenger" vibration machine. Fig. 6 shows the vibrating table and the stripping press.

Another interesting application of the Scoopmobile at this plant (Fig. 7) is the use of a quickly-attached drag for smoothing the yard.

The General Concrete Products Company has been in business since 1940 when it was organized by Mr. Ripley. He has taken a leading part in obtaining better public acceptance of concrete-masonry construction in the Los Angeles area by striving to improve the standards of quality, not only in his own plant but in those of his competitors as well. He initiated the formation early this year of the Southern California Concrete Masonry Association and is now serving as its first president.

Farm Market (*from page* 110)

a number of sample newspaper stories to provide a general guide for the preparation of such material. The following is a typical example:

"A 40-year-old barn on the John Doe farm had been causing its owner a great deal of concern. Timbers in the lower portion of the building were rotted so badly that Mr. Doe feared the next severe wind-storm might cause the structure to collapse. Aware of the critical shortage of most types of building materials, Mr. Doe felt that nothing could be done about making repairs until a neighbor suggested the possibility of using concrete masonry.

"A check-up disclosed that the Blank Concrete Products Company could supply the necessary materials. Without interference with dairy operation the barn was jacked up and the rotted timbers replaced with a foundation and lower walls of 8- by 8- by 16-inch concrete block. Finally a concrete floor was laid and now the barn is good for many years of useful service.

"But that isn't the end of the story as far as the John Doe farm is concerned. A new concrete-masonry milk house is soon to be built with block which will be hauled to the farm on return trips from the market."

In many cases story material may be even less specific than the above and still be acceptable to editors, but it is advisable not to play up the company name any more than the facts justify. Producers who wish to avail themselves of this excellent kind of advertising should make it a practice to follow up orders and learn at first hand what use is being made of their products.

Next month: Direct Mail Leaflets and Sales Letters.

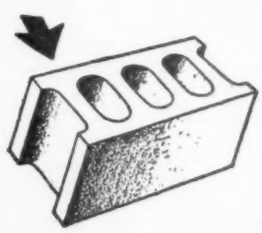
CONCRETE MASONRY

available to Farmers

Farm repairs and improvements which save labor and help increase production can be made now with non-critical CONCRETE MASONRY. Prompt delivery. Ask us for free estimate.

NAME of PRODUCTS CO.

Address **Telephone**



Direct-appeal ads, like one above, are good business builders.

Calling All Masons Theme of Booklet

A recent publication of the Structural Clay Products Institute, *The Mason Shortage,* calls attention to an acute situation affecting those engaged in the production of concrete building units. In recommending the booklet to its members, the National Concrete Masonry Association urges them to familiarize themselves with the apprentice situation in their respective communities.

It is suggested that training courses for masons be offered in the areas most seriously affected by the shortage. Moreover, producers are advised to supply concrete units required for the training, since "one bricklayer using concrete masonry units will build as much wall as two bricklayers using brick."

A new cinder block factory is under construction in Walton, New York, the future headquarters of the S. J. Bailey Company of Nicholson, Pennsylvania. A force of 200 workers is expected to be needed to man the plant.

Georgia Contractors' Stop-Gap Plant Becomes Permanent Products Business

View from storage yard showing elevated tracks under which plant was built. Curing rooms open on either side of runway building at left.

By WILLIAM M. AVERY

another P and Q exclusive

DURING the past several years some evidence has accumulated of a trend among building contractors to establish their own block producing facilities. In not a few instances the step has been taken as a desperate expedient to assure an adequate supply of material to permit the fulfillment of war housing contracts in areas where the normal supply facilities have collapsed. This has been particularly true in localities in which excessively low prices and wages existed at the time that controls were established, with the result that owners could no longer operate their plants at a profit or maintain a sufficient crew to assure deliveries. Under such circumstances owners have occasionally leased their plants to contractors, who could produce for their own consumption without regard to the many restrictions which hampered the normal operators.

These war-born anomalies will fortunately disappear along with the controls that created them, but it is a fair assumption that in some localities building contractors are in the block business to stay. Their presence in the field should, in the long run, have a salutary influence upon the standards of the industry, and ought also to serve as a mild reminder to marginal operators that quality of production is still the industry's number one problem.

The concrete products plant of Clarke & Clarke, building contractors of Savannah, Georgia, antedates the war by several years, but it is typical insofar as it was initially conceived as an adjunct of the firm's building activities and not as a separate business venture. The entire output of the company's first

Two block machines produce an average of 6,000 units per 10-hour day.

plant, built in 1937, went into the construction of private dwellings which were then being erected at the rate of about 50 units per year. When the operators discovered that 40 per cent. of the houses were requiring new paint jobs within the first year, a search was begun for materials that would perform more satisfactorily in the humid, salt-laden atmospheric conditions that prevail along this section of the Atlantic coast. The interest generated by this research venture inevitably lured the firm more deeply into the products business, and by 1939 a new plant had been built and it was decided to produce for general sale under the name Cement Products Company.

The site of this plant is in itself of more than passing interest, for it is located directly under the elevated tracks of the Central of Georgia Railroad. The line is single track, but a spur siding adjacent to the plant storage bins makes it possible to unload cars without interference with traffic. The elevated structure, built shortly after the Civil War, consists of a series of graceful masonry arches, and the plant is so closely integrated with the railroad that one arch span actually constitutes the roof over the block machines and the mixers.

The 3 aggregate bins which flank the siding have concrete block side walls. Seven carloads, or about 500 cubic yards of material can be stored. The cars are normally dumped opposite a 30-foot bucket elevator which discharges into a chute equipped with a chain coupling at the top to permit loading into any one of the three bins;

Yamacraw Village housing project, built of light-weight blocks made by the Cement Products Company of Savannah, Georgia.

a drag under the track is used to feed the elevator. Bagged cement is at present unloaded from box cars into steel chutes which discharge on the mixing floor, but the company plans in the near future to install a bulk plant to replace this method of handling.

The company operates two Stearns No. 7 Joltcretes which are set up at ground level directly below the arch. A steel balcony above the machines supports the two Stearns 28-cubic-foot mixers and provides storage space for cement. The approximately 21-foot clearance from grade to the crown of the arch allows sufficient headroom for the machines and mixers, although there is some cramping at the extreme ends of the balcony.

The aggregates flow by gravity through steel chutes from the bins to the mixers; proportioning is gauged by marks on the sides of the mixers, and the flow is controlled by manually-operated gates. The mixers discharge directly into steel hoppers mounted above the block machines.

With this equipment the plant has produced as much as 7,500 units in a 10-hour day, although normally production averages closer to 6,000 8- by 8- by 16-inch equivalents. Light weight aggregates, including both Superock and Haydite, have been preferred since the discovery that these materials helped to eliminate the paint failures that occurred in the company's early experience.

Four 10-by-45-foot curing rooms, with a capacity of 12 50-unit racks each, were originally constructed with the plant. After several years it was decided that these rooms were too cumbersome and tied up too many racks and pallets, and accordingly they were torn out and replaced by 16 9- by 20-foot rooms in 2 lines facing a central covered runway. Concrete blocks were used in

Rack of welded-steel pipe developed by the firm for handling units.

the side walls and the arched roofs are of reinforced monolithic concrete.

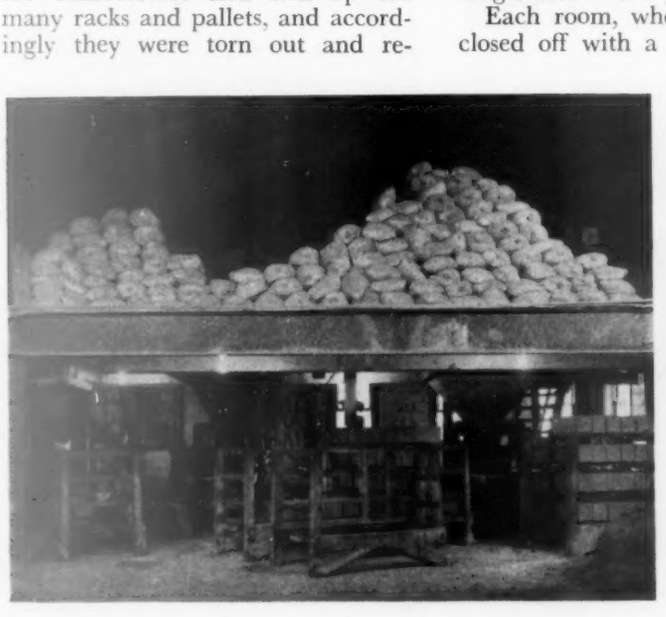
The wood racks with which the plant started operations are now being replaced as rapidly as possible with all-steel, welded units in which 1½-inch standard pipe is used for the side frames. Sharp corners are eliminated by making each frame continuous, with long radius bends between the vertical and the horizontal members. Breakage in handling has been reduced materially by the adoption of this stream-lined type of rack, and a considerable saving in the over-all cost of racks seems definitely assured. Barrett-Cravens jack-lift trucks are used for handling racks on the runways, and a small Whitehead & Kales Tug is available for pulling the trucks on long hauls in the yard.

Each room, when it is loaded, is closed off with a canvas drop curtain, and 75-pound steam is introduced through drilled pipes located on the side walls. Except for two rooms which are stripped after a lapse of 8 hours, all the blocks remain in the kilns over night before being removed to the storage yard. Up to 300,000 blocks can be accommodated on the yard. The company operates two trailer trucks and makes deliveries as far as Charleston, a distance of about 130 miles.

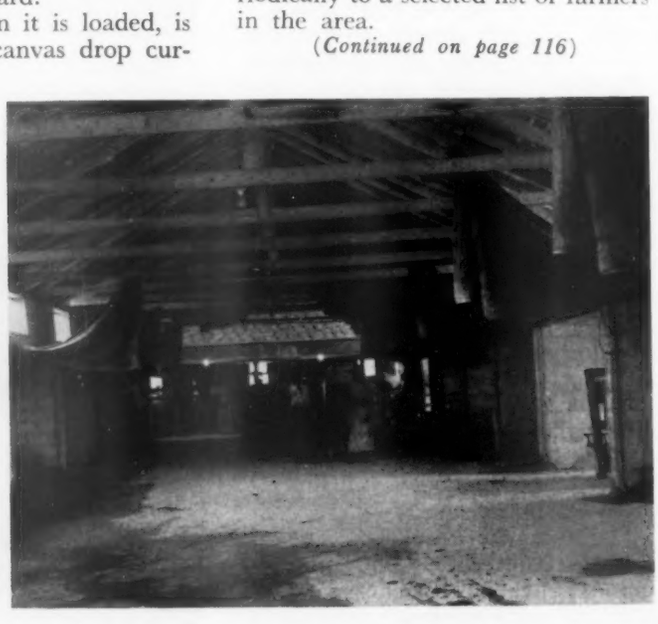
Among the outstanding construction projects for which the Cement Products Company has supplied light-weight block are the Yamacraw Village housing group and the Bradley Plywood Company's factory building, both located in Savannah. Yamacraw Village, completed in 1941, contains 480 family units, and 600,000 light-weight blocks went into the construction. The Bradley Plywood plant, a 126- by 600-foot rectangular enclosure, was, at the time of its construction, the largest building ever erected with light-weight concrete units in this locality.

In the past year this firm's sales to the farm market have shown a considerable increase, and the volume of business transacted on a cash basis has increased proportionately. George S. Clarke, Sr., president of the company, attributes increased farm sales in a large measure to persistent advertising aimed at the farm market. Most of the copy used in this program is furnished by the Portland Cement Association, and regular insertions are made in Savannah newspapers and others in the vicinity. Excellent results have also been obtained from special pamphlets which have been mailed periodically to a selected list of farmers in the area.

(*Continued on page 116*)



The two block machines and the steel balcony on which the mixers are located. Roof is part of railroad structure.

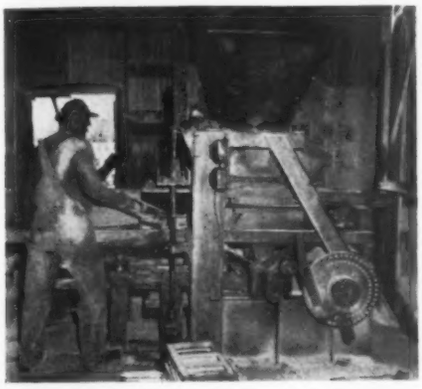


There are eight curing rooms on each side of the runway. Jack-lift trucks are used for handling the racks.

Improved Methods and Equipment Spell Success for Alabama Firm

another ON THE SPOT report

A LITTLE over three years ago Chris Hampen, owner and operator of the Chris Hampen Block Company, purchased an existing block plant in Birmingham, Alabama, after two previous owners had failed. Mr. Hampen admits now that he was gambling with the odds rather heavily against him, for the block business in Birmingham, as elsewhere, is highly competitive. He had, however, one important advantage over most newcomers in the concrete masonry field: ten years of varied and successful experience in the construction of concrete masonry houses. With his thorough knowledge of the product from the builders' point of view, Mr. Hampen was willing to gamble on his ability to master the production end of the business, and to make the plant earn money despite the two previous failures.



Output on this block machine averages between 325 and 350 8- by 8- by 16-inch equivalents per hour.

He operated the plant for a year with the existing equipment before undertaking any important changes, and as a result he had a clear picture of the relative merit of the various operations and of the improvements that were most urgently needed. To increase production per man-hour the existing stripper-type block machine was replaced with a Stearns No. 7 Joltcrete, and steam curing was adopted to improve quality and reduce breakage. Seven curing rooms, each measuring 8½ feet by 19 feet, were built, using the plant's own block in the sidewalls and reinforced Superock concrete in the roof slabs. Each room has a capacity of 300 standard 8- by 8- 16-inch equivalents stored on 6 wooden racks holding 50 units each.

Steam is supplied by a 30-hp. coal-fired boiler and is admitted to the curing rooms through open bleeder pipes until the temperature rises to between 120 and 130 degrees F. The open ends of the kilns are sealed off with canvas drop curtains nailed directly to the Superock block in the side walls.

The plant uses only Superock aggregate, graded from dust to ¼-inch, and delivered in open-top cars from Superock's production plant at East Thomas, Alabama. The aggregate is hand shoveled from the cars into a floor bin adjacent to the mixer. Consumption is at the rate of about 3½ cars of 45- to 50-ton capacity per week.

Standard Portland cement in cloth bags is supplied by the nearby Lone Star plant, and is stored in a building adjoining the main structure. Storage space for two carloads has been provided, despite the fact that the proximity of the source makes delivery possible within two hours after an order has been placed.

To secure more workable and slower setting concrete during the summer months, Mr. Hampen uses a mixture of ⅓ Magnolia—manufactured by the Southern Cement Company—and ⅔ standard Portland cement. Block made with this blend are somewhat more dense than those made with straight standard cement, and 28-day strengths run a little higher, but the principal objective is improved workability. A carload of air-entraining cement was tested at the plant, but the results

The aggregate is shoveled into a hinged pan and discharged into the 28-cubic-foot mixer.

General view of the Chris Hampen Block Company plant in Birmingham, Ala. Superock aggregate is being unloaded from car in foreground.

seemed inconclusive insofar as workability was concerned, and the tests were not repeated.

The aggregate is shoveled into a

The seven curing rooms have a total capacity of 2,100 8- by 8- by 16-inch equivalents. Racks are handled on jack-lift trucks.

hinged pan in front of the Stearns 28-cu. ft. mixer. The pan is elevated and discharged into the mixer by means of a small cable hoist. The aggregate is mixed with water for a few seconds before adding the cement in order to expedite wetting. The proportions used are about 1 to 7, and the total mixing time for the standard 3-sack batch is 8 or 9 minutes. The mix is discharged into the hopper over the block machine by a Stearns skip hoist.

The pallets are hand-loaded onto the racks, which are moved both in the building and in the yard on Barrett-Cravens jack-lift trucks. One of the first improvements made in the plant after Mr. Hampen acquired it was the construction of concrete runways in the storage yard. Reduced breakage and increased rack life resulted almost immediately from this improvement.

Production averages between 325 and 350 standard 8- by 8- by 16-inch equivalents per hour, and the plant works an 8-hour day plus 1 hour for cleanup and oiling. Thus an average day's production runs somewhat in excess of 2,400 units. Since the capacity of the seven curing rooms is only 2,100 units, it is apparent that the first room loaded in the morning must be emptied and reloaded at the end of the day.

One important reason why Chris Hampen has succeeded where his predecessors failed is the careful attention he gives to preventive maintenance. In too many plants maintenance is largely confined to efforts to repair damage after breakdowns have occurred, although it is self-evident that its most important rôle should be to prevent breakdowns from occurring. In the Hampen plant clean-up, lubrication and mechanical maintenance all receive close attention, and as a result in more than two years there hasn't been a single major breakdown. While it is clearly evident that this kind of maintenance reduces costs and increases production, Mr. Hampen feels that an even more important result is improved quality of the product.

Six men are employed in the plant, and about 75 per cent. of production consists of 8- by 8- by 16-inch units, with 4-inch partition and backup units next in importance. Some shipments have been made from the plant by railway, but hired trucks are employed most of the time, since most deliveries are made in the Birmingham area. About 15,000 masonry units are sold each month to coal and iron mines in the vicinity as a substitute for timber in lining air tunnels. This is considered an excellent outlet, since there is no specification to meet and uncured block are quite acceptable. It is generally felt that concrete masonry has proved so satisfactory in this relatively new application that demand will persist even after the lumber shortage has been relieved.

The farm market has provided another excellent outlet for the production of the Hampen plant. In October of last year, for example, 11,000 units were sold for the construction of pump houses alone, and Mr. Hampen considers that the farm market in the Birmingham area is only in the very early stages of development.

Chris Hampen's interest in concrete masonry is still mainly from the builders' point of view, and this, more than any other factor seems to explain the success he has won. Having sold, designed and built innumerable masonry houses, he understands thoroughly the problems of the builder and is genuinely anxious to assist in their solution.

Truck about to pull out of the yard with a load of 8- by 8- by 16-inch units. Practically all shipments are by truck.

Georgia Contractors

(*from page* 114)

Another even more unique departure from the well-worn rut of block plant operations is the company's practice of making its own Portland cement paint. A small ball mill is used for grinding the materials — 80 per cent. white Medusa Portland cement, 15 per cent. lime and 5 per cent. titanium dioxide. Although the manufacture of paint, like the production of block, was undertaken initially because no dependable outside source of supply could be located, more of the material is now sold to other users than the firm consumes in its own building activities. Mr. Clarke has had almost 40 years of experience in the home building field, and is a firm believer in the absolute necessity of sealing exterior masonry walls against moisture.

Mr. Clarke's son, George S. Clarke, Jr., is his partner in both the contracting firm of Clarke & Clarke and in the Cement Products Company.

New Ready-Mix Firm Organized in Dubuque

A sister company of the Dubuque Stone Products Company of Dubuque, Iowa, is the Dubuque Ready Mix Concrete Company, recently organized in that city. The following officers were elected: G. D. Rose, president; B. L. Molo, vice-president; H. E. Molo, secretary; P. M. Nauman, treasurer.

Oliver E. Delavan, formerly an official with the Office of Defense Transportation in Spokane, Washington, has revealed plans to build and operate a ready-mixed concrete factory in Coeur d'Alene, Washington.

Temporary Plants Solve Problem of Supply for Military Construction in Remote Areas

Aggregates and concrete plant which supplied material for Army at St. Johns, Utah.

Many military construction projects have been located in remote and relatively inaccessible areas, too far from established sources of aggregates or concrete to allow dependence on such supplies. As a result, many temporary plants have done noble service supplying ample quantities of high quality material to enable the projects to proceed on schedule.

A typical example is the plant pictured herewith which produced the aggregates and mixed the concrete as well for the United States Army Chemical Warfare Depot at

ERIE BUCKETS

• Erie builds all types of buckets in various capacities and weights to meet the job and operating conditions. Choose the correct bucket for the job and you get maximum speed and output. Write for broadside on the complete Erie line of buckets.

THE COMPLETE LINE

Address
6512 Geist Road

ERIE STEEL CONSTRUCTION CO.
ERIE, PENNSYLVANIA
Aggre Meters • Buckets • Concrete Plants • Traveling Cranes

Let
Our Experience Help You PLAN YOUR READY-MIX CONCRETE PLANT

Johnson Engineers are ready to assist you in designing and building a ready-mix plant that fits the actual needs of your market—one that will produce the bigger profits *at a minimum investment.* Johnson equipment can be expanded economically as your sales grow.

Specific recommendations, and an individual plant layout—featuring Johnson's famous Concentric batcher that delivers scientifically batched material *economically*—as you need it, are yours for the asking.

This service, of course, is without obligation.

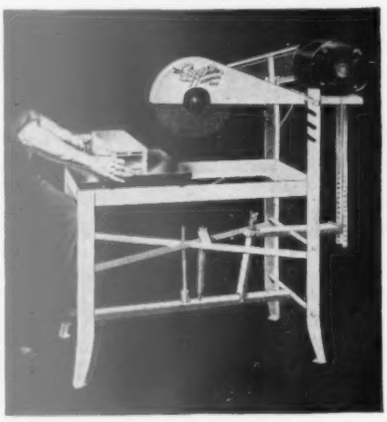
As the first step—write today for details.

ARMY E NAVY

THE C. S. JOHNSON COMPANY
Champaign, Illinois
A Koehring Subsidiary

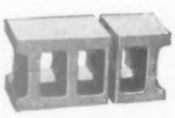
FASTER CUTTING
...with
Clipper Masonry Saws

Your Special Size and Shape Brick or Concrete Block can now be "Tailor Made" at a moment's notice!



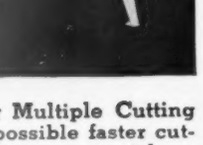
The new Clipper Multiple Cutting Principle makes possible faster cutting of every masonry material regardless of hardness.

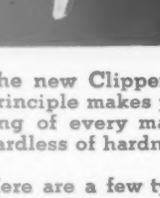
Here are a few typical examples of the speed and accuracy with which concrete products and fire brick can be cut.



This concrete block, converted into a special size, was cut completely in two in 19 seconds.

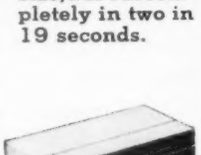
One of the many intricate cuts performed on first quality clay brick for heat treating furnaces. —made in 8 sec.





Rotary Kiln Blocks, cut to size for "key" bricks in rotary kilns, require only 10 sec. for completion of cut.

Basic refractories for steel furnaces or cement kilns must be accurately installed. This magnisite brick was cut in 12 seconds!



Clipper Saws are available for trial. Write for Descriptive Catalogs.

THE Clipper "CUTS RIGHT THRU" MANUFACTURING COMPANY

4029 MANCHESTER

ST. LOUIS, MISSOURI

St. Johns, Utah. The plant was owned and operated by Chemical Constructors, general contractor, in which three contracting firms pooled their efforts. These were the Callahan Construction Company, Gunther & Shirley, and Person & Hollingsworth.

The entire set-up was located near the construction project so that concrete could be delivered without the use of truck-mixers. The pit was about 20 miles distant, the nearest source of acceptable material, and the pit-run sand and gravel were transported to the plant by motor trucks.

A Diamond No. 65 portable screening-and-crushing plant was the heart of the operations and may be seen at the extreme right in the picture. An inclined belt-conveyor carried the product of the portable up to a Diamond 4- by 10-foot triple-deck vibrating screen for final sizing. Sized materials were chuted to open storage and recovered by a reclaiming belt operating in a tunnel, another inclined conveyor carrying them up to the Butler batching plant. The batched aggregates, cement, and water were discharged into a 2-cubic yard Smith tilting mixer and the concrete was hauled to the forms by six motor trucks carrying Garlinghouse 2-cubic yard lay-down concrete buckets. The use of this type of bucket-body enabled the concrete to be poured into buggies for quick dispatch to the forms.

The aggregate plant was operated for the most part at its rated capacity of 125 cubic yards per hour. Approximately 70,000 cubic yards of concrete was produced. Tower floodlights allowed operations to continue at night. Charles Clapp was the job superintendent.

Boukma Takes Over Kalamazoo Block Plant

Pete Boukma, proprietor of the Lincoln Cement Block Company of Kalamazoo, Michigan, has operated the plant for the past year as the successor to Mrs. Chris Kievits. From 1938 to 1944 Mr. Boukma had owned and operated a plant in Grand Rapids.

Plans for the erection of a $12,000 ready-mix concrete plant at Colfax, Washington, have been announced by R. H. Sutherland, president of the Sutherland Seed Company of that city.

NEW MACHINERY and SUPPLIES

● Lightweight Trucks and Wheels

Northrop Gaines, Inc., a wholly-owned subsidiary of Northrop Aircraft, Inc., is using airplane fabricating techniques in constructing hand trucks and industrial wheels of light metals. Among the first items will be industrial wheels,

All-aluminum truck.

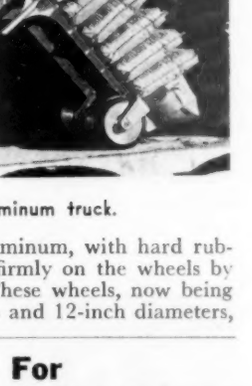
cast solidly of aluminum, with hard rubber tires molded firmly on the wheels by a new process. These wheels, now being built in 6-, 8-, 10- and 12-inch diameters,

For
Uniform, Controlled Concrete

Install [SC]2 PRECISION CONCRETE CONTROL **It Includes**

Moisture Meter

Makes a test for moisture content of fine or coarse aggregates in ONE minute. Accurate to ¼%.



Compensator

Delivers correct DRY weight of wet aggregates and ADDED water. Makes a graph record of EVERY BATCH.

[SC]2 **CONTROL produces *uniform concrete*. Is always approved by concrete engineers. Has definite sales value. Write for our booklet "Profits in Concrete."**

SCIENTIFIC CONCRETE SERVICE CORP.

724 Salem Avenue, Elizabeth 3, N. J.

are designed for use on hand trucks, dollies and all rollable industrial equipment.

Although they weigh as little as three pounds, the Northrop Gaines wheels are built to carry 40 per cent. more weight than any wheel of equivalent size, according to a recent release. They are equipped with Timken tapered bearings, which require no lubrication during the life of the wheel.

Northrop Gaines also is in production on a line of hand trucks which, according to President Frank Gaines, will "take the back-break out of materials moving." These hand trucks are featherweights, with a frame cast in one solid piece of aluminum. The smallest of three sizes weighs only 36 pounds, yet has been stress-tested under a 5,000-pound load.

● Streamlined Tractor

Gasoline-powered industrial tractors are once again rolling off the assembly lines in the Towmotor Corporation plant at Cleveland, Ohio. Production of these units, which Towmotor had been building since 1919, was halted in 1941 to allow the company to concentrate its production facilities upon the manufacture of lift trucks.

Useful in narrow spaces.

The new model tractor, pictured here, has several outstanding design and construction features. Compact and maneuverable, the Towmotor tractor is especially suited for working in such confined areas as in narrow factory aisles, up ship gangplanks and in and out of railway cars. The new unit embodies numerous safety features, eliminates many hazards in moving materials and operates economically, total operating costs being only a few cents per hour, the manufacturers claim.

● Giant Block Machine

A headliner of the recently reorganized Jackson & Church Company of Saginaw, Michigan, is its 13-ton concrete-block machine. According to company officials, the machine will produce 50 per cent. more units than any of its competitors. Developed for post-war civilian distribution, the new unit has been granted A.A.A. priority to obtain needed parts.

Another Jackson & Church device, a tank for impregnating magnesium and aluminum castings to prevent oil leakage, also is expected to become popular.

JOHNSON COMPLETE BULK CEMENT PLANTS. 4 pages. The C. S. Johnson Company, Champaign, Illinois.

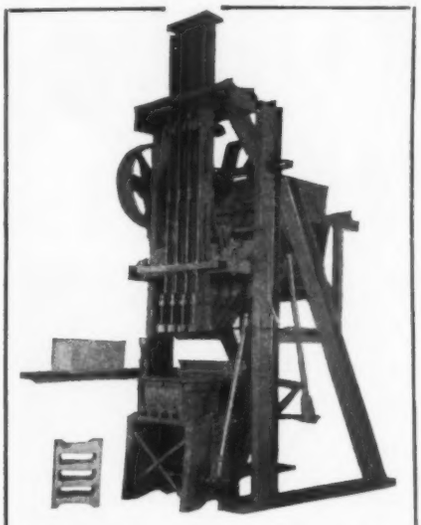
JOHNSON CEMENT BATCHERS. The C. S. Johnson Company, Champaign, Illinois.

MATERIALS HANDLING ANALYSIS GUIDE. 36 pages. Towmotor Corporation, Cleveland 10, Ohio.

PLANNING YOUR HOME. 14 pages. Information on concrete masonry construction. The Besser Manufacturing Company, New York 17, New York.

FLAM CONCRETE VIBRATING EQUIPMENT. 8 pages. Stephen Flam, Van Nuys, California.

BLAW-KNOX STEEL FORMS. Bulletin 2035. Blaw-Knox Division of Blaw-Knox Company, Pittsburgh 22, Pennsylvania.



An All-Purpose Machine

The Junior Stripper will turn out more blocks per man than any other hand-operated machine on the market . . . 200 per hour being easily maintained! Nor has quality of output been sacrificed for the sake of speed. Units are uniformly dense, true to shape, of uniform texture.

Hobbs block machines, Anchor tampers, Anchor Jr. strippers, Stearns power strippers and Joltcrete, Stearns mixers, and Cast Iron and Press Steel pallets, Straublox oscillating attachments, etc. Repair parts for: Anchor, Ideal, Universal, Stearns, Blystone mixers and many others.

ANCHOR CONCRETE MACHINERY CO.
G. M. Friel, Manager — Columbus, Ohio

FOR SALE
2—STEARNS JOLTCRETE 29 VIBRATING BLOCK MACHINES
2—28 foot STEARNS MIXERS
ATTACHMENTS for 3", 4", 6", 8", 10", and 12" blocks.
STEEL PALLETS for all different blocks.
Approximately 5,000 3", 15,000 4", 5,000 6", 19,000 8", 9,500 12", 2,000 10", STEEL PALLETS.
R. BOWMAN
1500 No. Cameron St. — Harrisburg, Penna.

FOR SALE
About February, 1946
One Besser Super K 3 Tamper Complete, like new; approximately 3500 Steel Pallets; almost 100 Steel Racks; nine different Blocks and Brick Attachments; Power Air Hoist Off-bearer; Clark Lift Truck. Purchased new 1941. Selling all to one purchaser.
LEHIGH BUILDING BLOCK COMPANY
1019 North Quebec Street — Allentown, Pa.

WANTED
10 S Jaeger Tilt Type Mixers.
AMERICAN WILBERT VAULT CORPORATION
Forest Park — Illinois

"IT JUST KEEPS ROLLIN' ALONG"

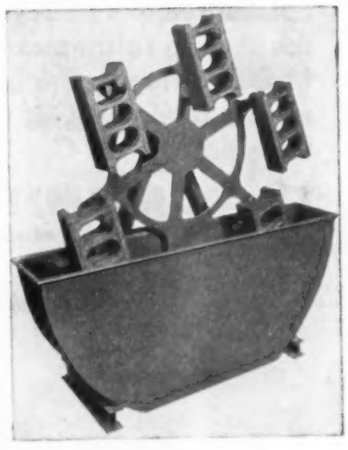
KENT
CONTINUOUS MIXER

KENT Two Hopper No. 2½ Mixer. Capacity, 8 cubic yards per hour.

A STEADY STREAM OF PERFECTLY PROCESSED CONCRETE — **insured by this KENT machine—is just what your block plant needs to establish output and profit records.**

KENT accuracy in measuring cement and aggregates — KENT thoroughness of mixing — KENT simplicity and durability — KENT operating economy—enable concrete block producers everywhere to handle current orders and "get set" for bigger post-war business.

For Clean Pallets . . .
dip 'em in the
KENT DUNKER



Your pallets will mold better blocks and give longer service if they are regularly cleaned and oiled in a KENT Dunker. Hang 'em on the pins—as you take them off, the rest are rotated through the tank. Truck crank case oil works perfectly.

Write for Bulletin

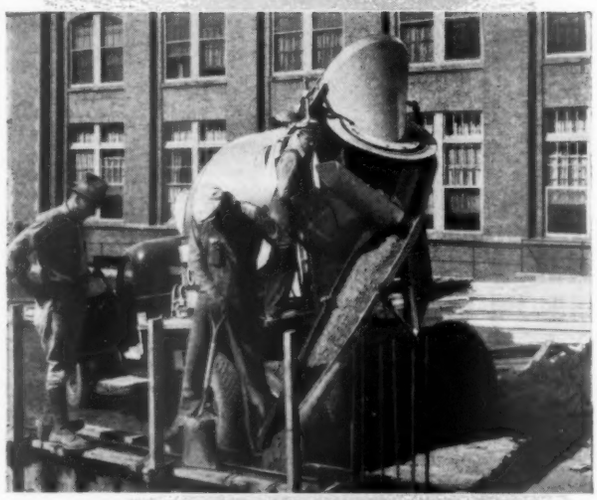
The KENT MACHINE CO.
Cuyahoga Falls, Ohio

Yes Sir- MY SMITH-MOBILE GIVES ME EVERYTHING I WANT!

"Why should I take unnecessary chances with UNTRIED truck mixers, when Smith-Mobile is a TRIED and PROVEN Product?"

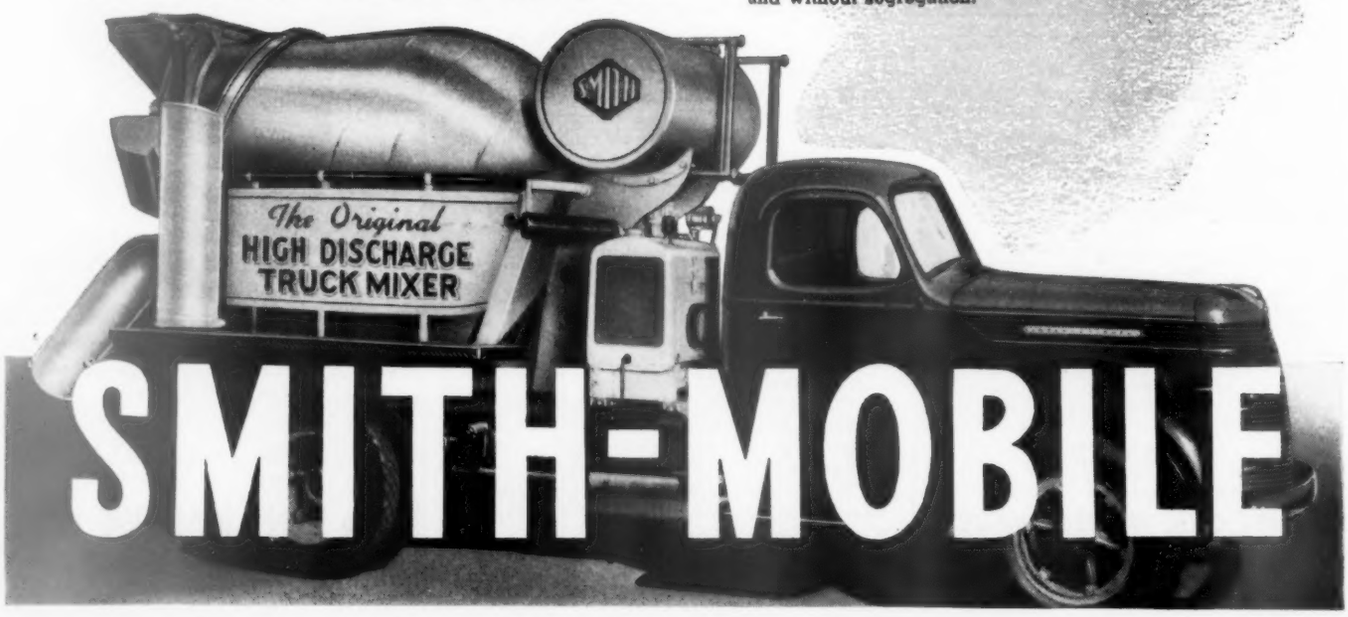
Ready-mixed concrete operators everywhere are playing safe by using dependable, job-tested Smith-Mobile Truck Mixers and Agitators. They KNOW Smith-Mobile fills the bill. They like its many time-saving, cost-reducing features. Backed by almost a half-century of specialized mixer building experience, Smith-Mobile is now entering its 8th year of quantity production. Instead of periodically introducing "new models", Smith has always been committed to a policy of constant improvements and refinements. That's why Smith-Mobile is today the LAST WORD in truck mixer design. Get the facts! Ask for Catalog No. 198-C.

The T. L. SMITH COMPANY
2887 N. 32nd Street Milwaukee 10, Wisconsin, U. S. A.

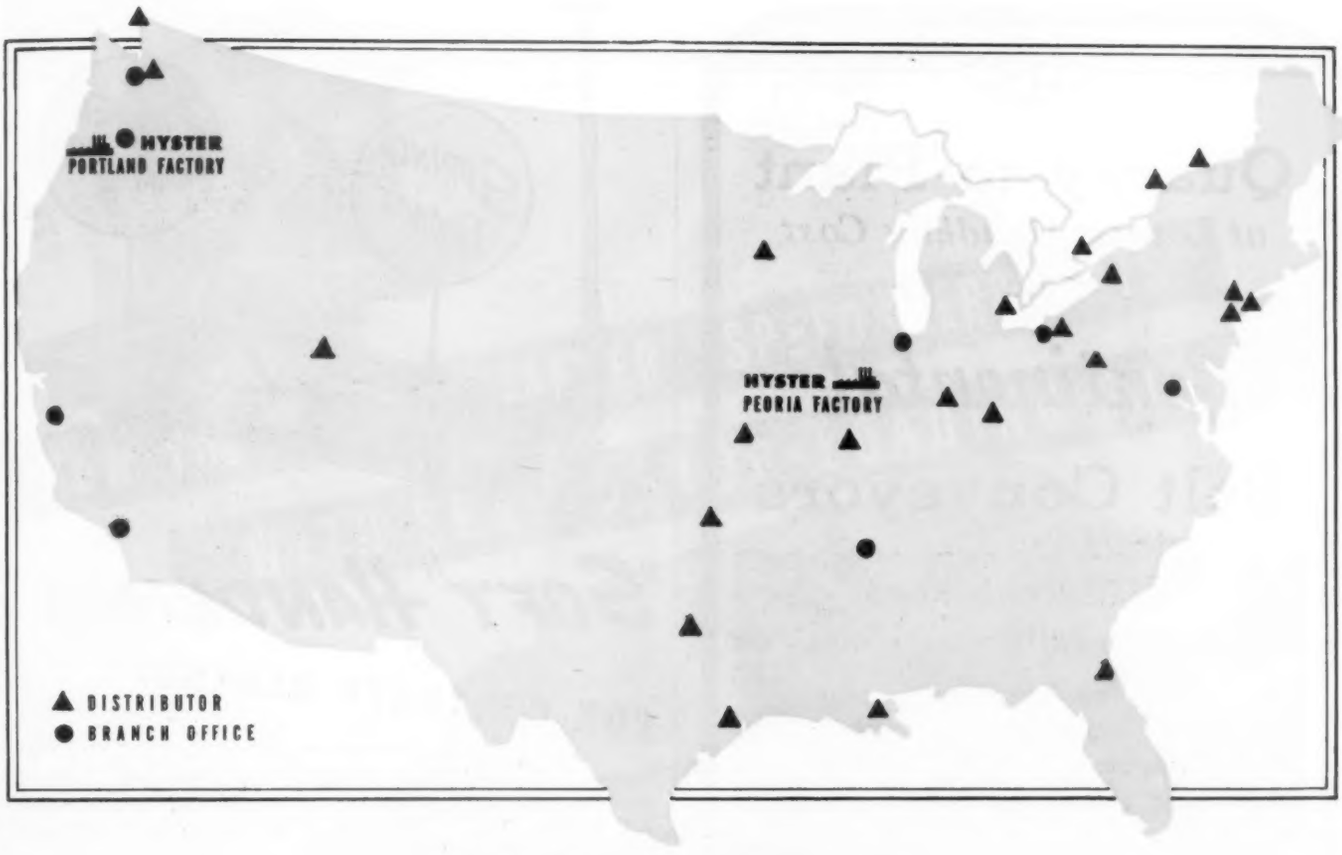


CONTROLLED DISCHARGE

Just one of Smith-Mobile's many job-tested features. The illustration above shows a Smith-Mobile discharging directly into forms. Operator is getting just what he needs for this particular job — discharge, fast or slow, under perfect control and without segregation.



SMITH-MOBILE



HYSTER

LIFT TRUCK SERVICE COVERS THE COUNTRY

33 HYSTER DISTRIBUTORS AND FACTORY BRANCH OFFICES GIVE HYSTER OWNERS COAST-TO-COAST SERVICE...

HYSTER owners throughout industry have rapid service on genuine Hyster parts and on mechanical maintenance.

Nation-wide parts and mechanical service is available through 2 Hyster factories, 8 Hyster branch offices and 23 Hyster distributors—a total of 33 centers.

This network of Hyster service facilities provides two important features:

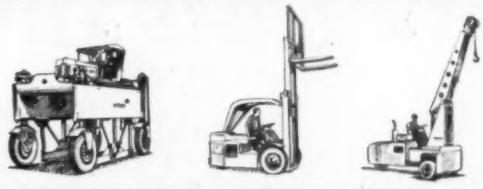
1. **Strategically located supplies of genuine Hyster parts.**
2. **Factory-trained mechanics ready to render special service.**

Hyster lift trucks get around-the-clock use, meet both production and utility demands. When either parts replacements or service attention is required, both are quickly available. *Hyster's Service Department, like Hyster's Sales Department, covers the country.*

HYSTER COMPANY

2926 N. E. Clackamas St., Portland 8, Oregon
1826 North Adams Street, Peoria 1, Illinois

Manufacturers of a complete line of pneumatic tire lift and straddle trucks and mobile cranes



CGC

Quarry to Plant

at Lowest Handling Cost

on

Continental

Belt Conveyors

ECONOMY AND SPEED

is the keynote in handling rock in this modern rock quarry.

Continental belt conveyors are meeting the demands for more and more rock—day in and day out.

Whether you need a single replacement idler or a complete installation, Continental can fill your requirements. All types of accessories, such as pulleys, bearings, take-ups, hold-backs, speed reducers, belt cleaning brushes, V-belt and roller chain drives can also be furnished.

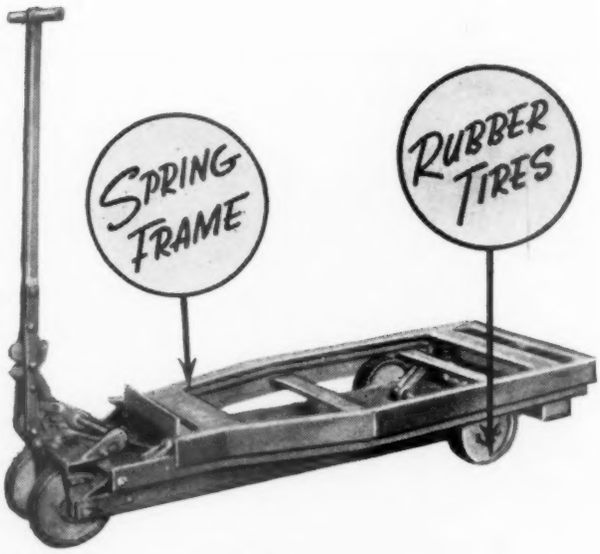
Call on Continental!

Industrial Division

CONTINENTAL GIN COMPANY

BIRMINGHAM, ALA.

ATLANTA DALLAS MEMPHIS



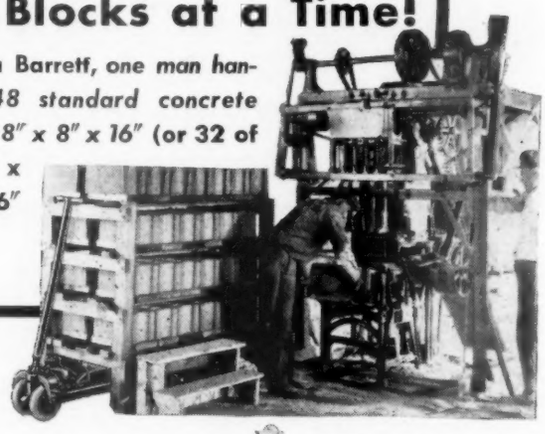
"SOFT" HANDLING

FOR CONCRETE BLOCKS!

From machine to curing room and right through storage, the handling of blocks is a "soft" job with Barrett Lift-trucks. Breakage is eliminated by the shock-reducing rubber tires and super spring frame. The load is *raised* with a single downward sweep of the handle . . . *lowered* gently under control of a hydraulic check. Make a "soft" job of handling concrete blocks. See a Barrett engineer . . . or write for descriptive circular.

48 Blocks at a Time!

With a Barrett, one man handles 48 standard concrete blocks 8″ x 8″ x 16″ (or 32 of the 8″ x 12″ x 16″ size).



Want electric drive?

THE POWEROX *has it!*

Cuts handling time and effort to an absolute minimum. Hand lift—electric drive, push-button controlled. Automatic brake, dual motors, rear wheel drive. PowerOx provides real economy without a large investment. Write for details today!

BARRETT-CRAVENS COMPANY

3251 West 30th Street • Chicago 23, Illinois

Representatives in All Principal Cities

Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada

Barrett Handling Equipment

BARRETT

ONE MAN DOES MORE THAN 3 OR 4 . . . WITH A BARRETT

FASTER AT THE JOB: *Quick operating door, controlled from ground or platform.*

Now You Can Get JAEGER "SPEED MERCHANTS" WITH SEALED, TOP-LOADING DRUM

2, 3 and 4½ YD. SIZES

PREFERRED FOR WET-MIX PLANTS, EFFICIENT FOR ANY TYPE PLANT BECAUSE:

1. **Fast loading, in one quick drop — Fast discharging, thru big, quick-opening door!**
2. **Sealed drum holds heat in winter — protects concrete from all bad weather!**
3. **Up to 400 lbs. lighter — no hopper maintenance problems — easier to flush and clean!**
4. **Sells your product on a quality basis — because engineers and contractors know that top-loading insures thoro-mixed concrete.**

Same advantages available in "LOW CHARGE" type — 2 to 8 yd. sizes.

PLUS THESE LATEST IMPROVEMENTS THAT PUT JAEGER USERS YEARS AHEAD:

"Functionally Designed" Water System: Top-heavy overhead tanks eliminated, center of gravity lowered — High pressure, clog-proof "Jet" distributes water, accurately measured by "Meter-Lock" control.

2-Speed Transmission and Center Drive, Positively Aligned — for a lifetime of increased efficiency.

Streamlined, Enclosed Front End — All-weather protection and winter warmth for power, transmission and water system, plus easier access to open-type engines and almost instantly adjustable outside clutches.

Latest chute design, drum roller assembly, precision die-shaped mixing blades and other features. *Ask your Jaeger distributor or write us for Catalog.*

End-Loaders if Desired

THE JAEGER MACHINE COMPANY

Main Office and Factory, Columbus, Ohio

REGIONAL OFFICES: 8 E. 48th St. NEW YORK 17, N. Y. — 226 N. LaSalle St. CHICAGO 1, ILL. — 235-38 Martin Bldg. BIRMINGHAM 1, ALA.

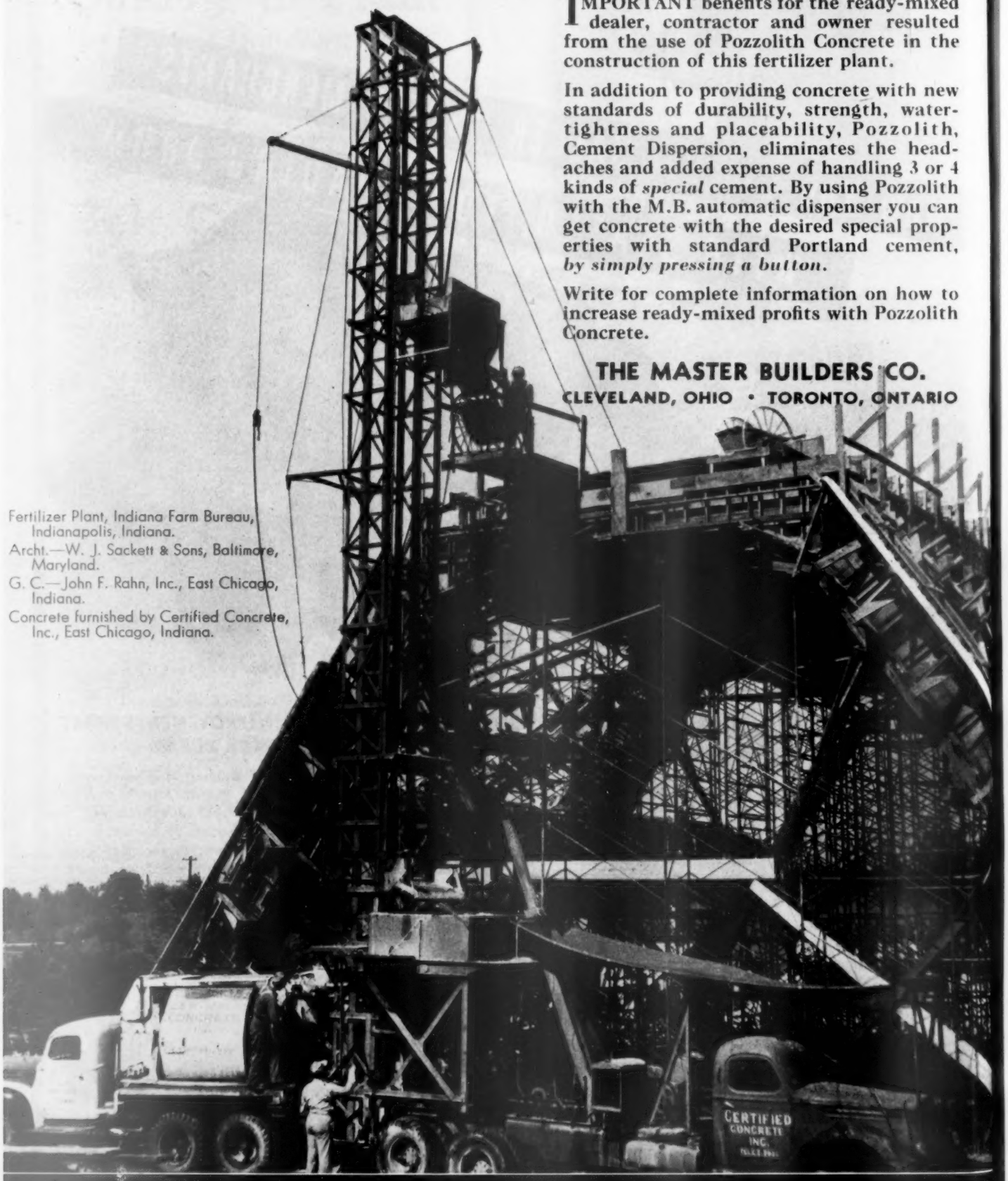
EASY-TO-USE POZZOLITH
PROVIDES GREAT DURABILITY, STRENGTH

IMPORTANT benefits for the ready-mixed dealer, contractor and owner resulted from the use of Pozzolith Concrete in the construction of this fertilizer plant.

In addition to providing concrete with new standards of durability, strength, watertightness and placeability, Pozzolith, Cement Dispersion, eliminates the headaches and added expense of handling 3 or 4 kinds of *special* cement. By using Pozzolith with the M.B. automatic dispenser you can get concrete with the desired special properties with standard Portland cement, *by simply pressing a button.*

Write for complete information on how to increase ready-mixed profits with Pozzolith Concrete.

THE MASTER BUILDERS CO.
CLEVELAND, OHIO • TORONTO, ONTARIO



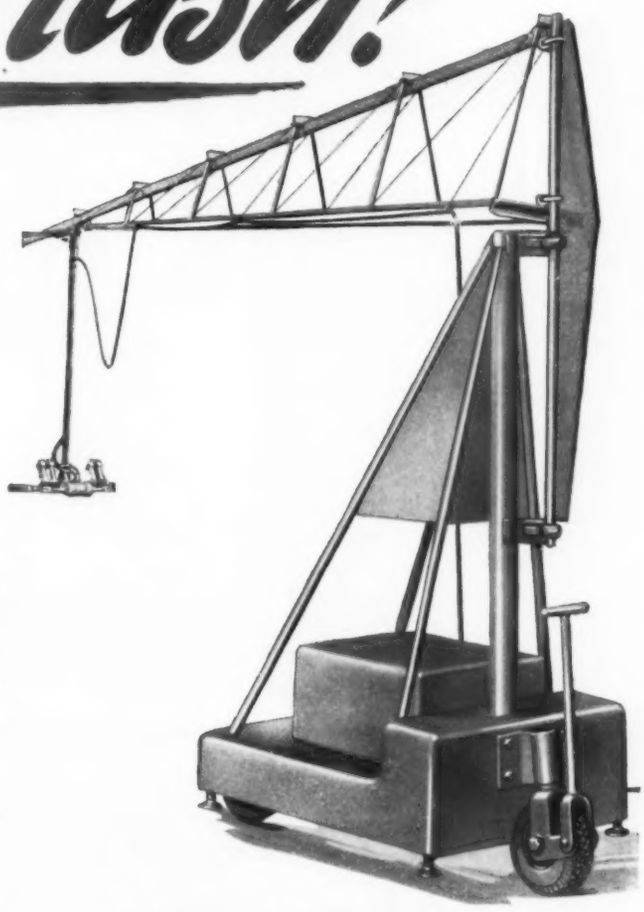
Fertilizer Plant, Indiana Farm Bureau, Indianapolis, Indiana.
Archt.—W. J. Sackett & Sons, Baltimore, Maryland.
G. C.—John F. Rahn, Inc., East Chicago, Indiana.
Concrete furnished by Certified Concrete, Inc., East Chicago, Indiana.

MASTER BUILDERS

News Flash!

STEARNS-Warren
YARDHOIST

PATENT PENDING



. . . One man easily handles 800 block per hour!

For handling cured block from racks to stock pile or from stock pile to trucks, there is positively no equipment that can equal the **Yardhoist.**

This is the much publicized Yardhoist developed by Millard Warren, Knoxville, Tennessee, from whom Stearns has secured exclusive manufacturing rights. Many outstanding plants are operating this unit with remarkable savings in their yard handling costs.

Two outstanding features covered by patents pending are as follows—

First: Its ability to pick up block from racks without top clearance (see Fig. 1). That is, the block can be removed from fixed-deck racks **from the side,** without removing or raising any decks.

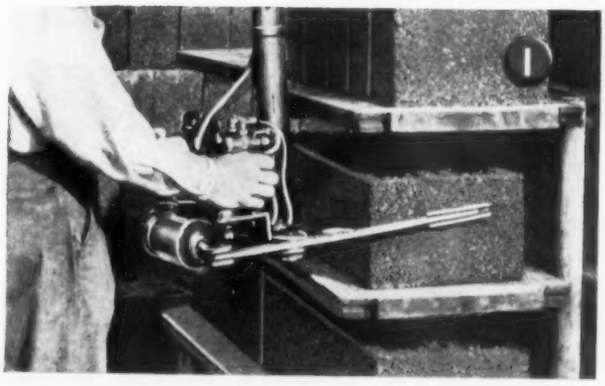
Second: Its ability to rotate through a vertical plane permits block to be stacked without leaving spaces between them (see Fig. 2). This enables the operator to stack block in any desired position and gives general flexibility and ease of operation not possible without the rotating feature.

Without the above features no yard handling device can approach this one in utility.

Yardhoist is quickly spotted in any part of the yard . . . Available as illustrated, or without wheels with base arranged for lift truck transportation. It eliminates hand labor . . . minimizes block breakage . . . speedily handles more than 800 8 x 8 x 16 in. blocks per hour. Multiples of other sizes handled with same relative speed.

Compressed air supplied by hose from plant or gasoline-driven compressor mounted on Yardhoist base.

Orders, dated as received, will be filled in sequence . . . FIRST COME, FIRST SERVED.



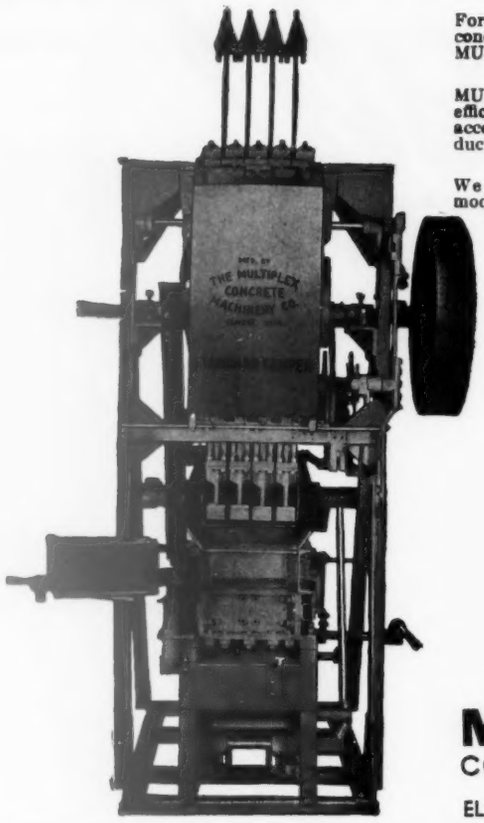
STEARNS

STEARNS MANUFACTURING CO. INC. ADRIAN, MICH.

GENE OLSEN, PRESIDENT

Pioneers in the design, manufacture and distribution of modern machinery for producing concrete masonry units . . . Vibration and tamp-type block and brick machines . . . Mixers . . . Skip Loaders . . . Yardhoists.

MULTIPLEX Machines For Postwar Profits



For a Quick "Take-Off" and sustained pace in concrete block output, reserve one of the MULTIPLEX *high-speed* machines.

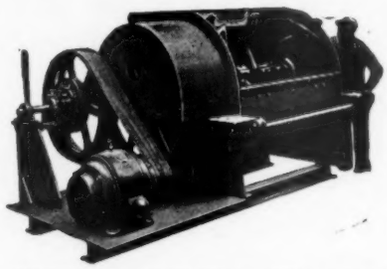
MULTIPLEX offers a wide variety of super-efficient mixing equipment, with all types of accessories necessary for economical mass production.

We can recommend MULTIPLEX units for modernizing *your* plant and enlarging its capacity.

Our universal type MULTIPLEX Standard Tamper for making plain and stripper, or face blocks, on one base. Easily convertible as business expands. Supplied with 4-bar or 8-bar tamper, either power or hand operated.

Write for Booklet describing the MULTIPLEX complete line of concrete mixing equipment, including Double and Single Hand Press Strippers, Power Press Strippers, and Super-Tampers.

The MULTIPLEX Flue Block Machine makes ventilated, solid or lightweight units, including all attachments for ventilator and stove pipe openings.



MULTIPLEX Multi-Mixer with reverse screw-type action insures fast and thorough mixing of every batch. Side, end or bottom discharge.

MULTIPLEX
CONCRETE MACHINERY CO.
Frank Muenzer, President
ELMORE • OHIO

The Power Lift Truck

Ericksons have stamina, power, speed and maneuverability. Big pneumatic tires on drive wheels. No paved runways required. All steel welded construction. Speedy hydraulic platform raiser. Simple controls. Write for complete details.

ERICKSON

LIFT TRUCKS, PLATFORM TRUCKS, HIGH AND LOW LIFT FORK TIERING TRUCKS.

For Fast Movement of Large Quantities of Block

ERICKSON SPECIAL EQUIPMENT MFG. CO.
109 14TH AVE. N. E. • • MINNEAPOLIS, MINN.

REMOVE DUST AND GRIT
from Motors and Machinery

Quickly
Safely
Inexpensively
with the

ACE
1 H.P.—2 Speed
Portable Blower

Avoid burnouts, breakdowns, excess wear. Operates from any electric socket. Blows, vacuums, sprays.
Write for FREE TRIAL OFFER. No obligation.
The ACE Co., 22 N. Orange St., Ocala, Fla.

CONCRETE BURIAL VAULTS

America's Finest Molds and Lowering Device

•

TERRITORY FRANCHISES

BERG VAULT CO.
EQUIPMENT DIVISION
1620 LUCAS HUNT RD.
ST. LOUIS, MO.

HOME for them!

and the HOME STRETCH for YOU!

You still have time! In December, your employees' allotments to the Victory Loan through your company's Payroll Savings Plan offer a final chance to help speed the proud homecoming of our fighting men—and do all in medical power for our hospitalized heroes!

Make December a plantwide TOP-THE-QUOTA drive! Now's the time to spotlight your Payroll Savings Plan—and "brief" your Bond-selling organization for fast, last minute action!

Resolicit every employee to buy the New F.D.R. Memorial $200 Bond

The new Franklin Delano Roosevelt $200 Bond—better than actual cash because it earns interest—is a strong building stone toward the secure future of every employee-purchaser!

From now 'til the New Year—with plant rallies, interdepartmental contests and resolicitation—keep Payroll Savings Plan Bond-buying at a new Victory Loan high! Buying a Victory Bond is the best way of saying "Welcome Home" to our returning veterans! Also an active aid in assuring prosperity to your nation, your employees—and your own industry!

VICTORY LOAN

The Treasury Department acknowledges with appreciation the publication of this message by

PIT AND QUARRY

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and War Advertising Council

SCOOPMOBILE

SOLVES YOUR LOADING and MATERIAL HANDLING PROBLEMS

Money-Making Labor-Conserving

EQUIPMENT FOR

- COAL YARDS — REMOVING SNOW
- ROCK, SAND — TOP SOIL — FERTILIZER
- CONCRETE — CONCRETE BLOCKS
- SKIP LOADING — HOISTING
- MANY ATTACHMENTS AVAILABLE

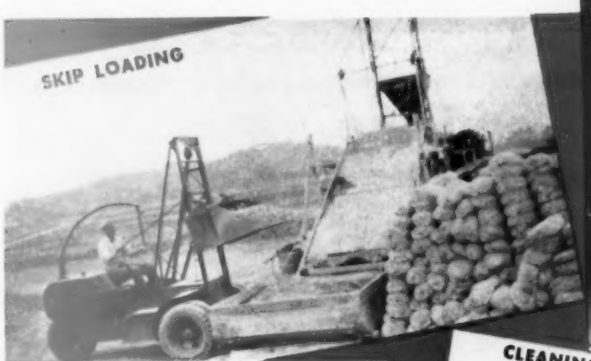
Write Today For Details

LIFTING ARMS

LOADING DUMP TRUCKS

HANDLING STOCKPILES

STOCKPILING COAL


SKIP LOADING

MOVING — LOADING PANELS

REMOVING SNOW

BOOM HOIST

CLEANING STOCKYARD—LOADING MANURE

CONCRETE HOPPER

CONCRETE BLOCKS

DISTRIBUTORS

East of Mississippi River: Mixermobile Company, Inc.
608 So. Hill Street, Los Angeles-14, California

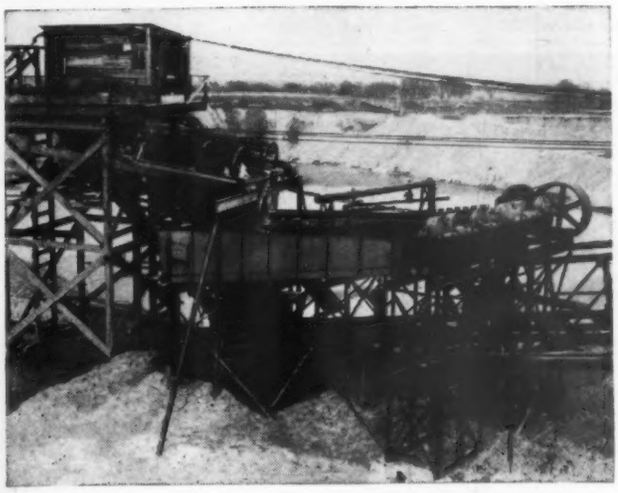
West of Mississippi River: Mixermobile Manufacturers
6855 N.E. Halsey Street, Portland-16, Oregon

McLANAHAN

improved

STEEL LOG WASHERS

Insure Greater Capacity . . . Lower Costs . . . Clean Products . . . Constant Demand and Higher Prices with Less Stripping



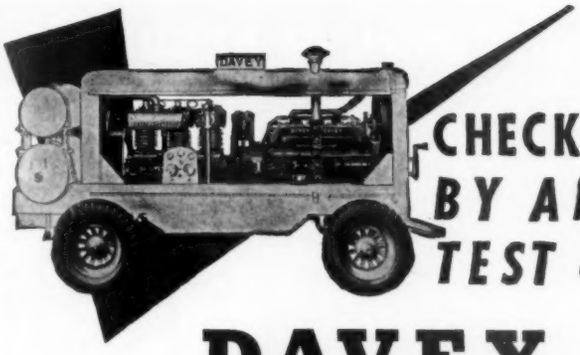
Three 30' Heavy Duty Double Logs with McLanahan Drag Washing Sand and Gravel in a large Mid-Western plant.

Here are a dozen reasons for McLanahan Steel Log Washer Superiority . . .

1. Each electrically welded steel log with welded bases driven separately.
2. Oversize steel log shaft gudgeons.
3. No twisting, sagging, or warping.
4. Improved interchangeable and reversible paddle arrangement.
5. All renewable bronze bushed bearings in discharge end.
6. Shafts, bearings, and steel gears held rigidly in safety housing and running in oil.
7. Rear bearings adjustable.
8. Adjustable overflow and discharge spouts.
9. Industrial lubricating fitting.
10. V or flat belt drives.
11. Minimum water requirements.
12. All self-contained in steel box ready to place on foundations.

Descriptive Bulletins On Request

McLANAHAN & STONE CORPORATION
Pit, Mine and Quarry Equipment Headquarters
Since 1835
HOLLIDAYSBURG, PENNSYLVANIA



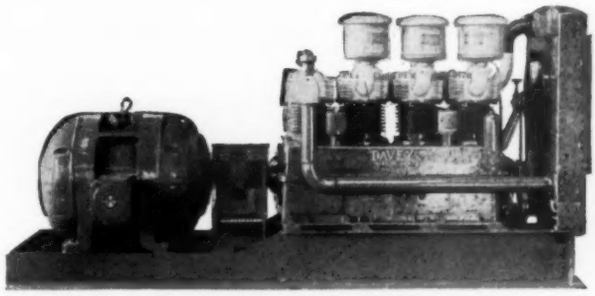
CHECK IT BY ANY TEST - -

DAVEY

AIR ARISTOCRAT

Our invitation to subject the Davey Compressor to the acid test of comparison is backed by the fact that it will deliver its rated output over a longer period of time than any other compressor, that its long-run cost is less.

Davey guaranteed-for-life valves are just one of the many reasons for the superiority of Davey Compressors. Davey conservative-speed operation is another big factor adding to its famous economy and long, trouble-free service. Add other Davey engineering features such as welded steel frame, aluminum alloy cylinder heads and automotive-type steering and you can readily see why we invite product comparison.



THE DAVEY INDUSTRIAL COMPRESSOR

The Davey Industrial Compressor is the quality leader among stationary air compressors because of the same exclusive Davey engineering features found in the trailer-mounted Air Aristocrat. For those tough pit and quarry jobs where maximum efficiency depends on a maximum air supply twenty-four hours a day, year after year, the Davey Industrial Compressor has no equal in sustained top performance, minimum maintenance and long-run economy.

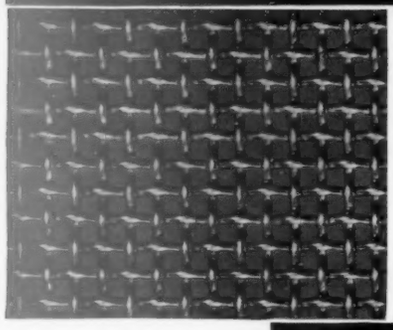
★

Write for Catalog E-172, which illustrates and describes the complete line of Davey performance-engineered Air Aristocrat Compressors, Auto-Air Compressors, Industrial Compressors, Heavy-Duty Truck Power Take-Offs and Pneumatic Saws, plus valuable pneumatic engineering data.

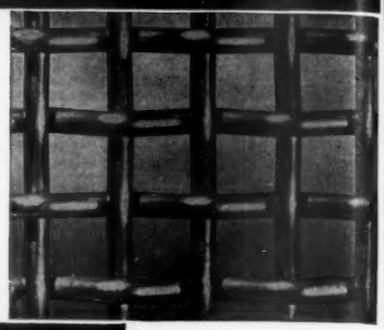
D-945-20B

DAVEY *Compressor Co.*
KENT · OHIO
DEALERS IN PRINCIPAL CITIES

Trade Mark of ACCURATE, DEPENDABLE WIRE SCREENS



THE TYLER
TRADE MARK
REG. U. S. PAT. OFFICE
DOUBLE CRIMPED



THE W. S. TYLER COMPANY, Cleveland 14, Ohio

BEAT THE PROMISE!

SCREEN SERVICE!

RUGGED, DURABLE AND ACCURATE
ALL METALS ALL WEAVES

FOR ANY INDUSTRIAL APPLICATION

THE CLEVELAND WIRE CLOTH & MFG. CO.
3574 E. 78TH STREET CLEVELAND, OHIO

LINN HAFTRAK
SINCE 1916

Low Cost Per Ton-Mile • Manganese Tracks • Contour-following Traction
Sturdy Construction
5 to 50 Tons Capacity
Negotiates Steep Grades, Mud, Snow and Ice

For
Mining • Quarrying • Logging • Snow Plowing • Dam, Highway, Airport and Oil Field Work

The Linn Manufacturing Corporation
Morris, New York
Designers and Builders of OFF-THE-HIGHWAY Vehicles

CONCRETE
FOR LOW ANNUAL COST

Concrete contractors and cement products men are saving money for their customers because concrete used for industrial, farm or home improvements is *low annual cost* construction, the true measure of building economy.

PORTLAND CEMENT ASSOCIATION
Dept. A12-58, 33 W. Grand Ave.
Chicago 10, Illinois

LIME PLANT OPERATORS

Cut your lime production costs 75% by installing the new revolutionary Nelson Inclined Furnace No. 5.

Designed—Built—Patented by:

VICTOR J. NELSON ENG. & CONSTR. CO.
1321 RIVERSIDE DR. BURBANK, CALIF.

PNEUMATIC TOOLS ELECTRIC TOOLS
HYDRAULIC TOOLS ROCK DRILLS
AIR COMPRESSORS VACUUM PUMPS
DIESEL ENGINES AVIATION ACCESSORIES

CHICAGO PNEUMATIC TOOL COMPANY

GENERAL OFFICES: 8 EAST 44th STREET, NEW YORK 17, N. Y.

THE DORR COMPANY

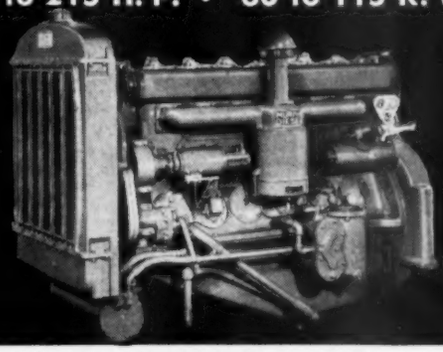
570 LEXINGTON AVE.
NEW YORK 22, N. Y.

Laboratories & Testing Plant at Westport, Conn.

Consultation Testing, Research Plant Design

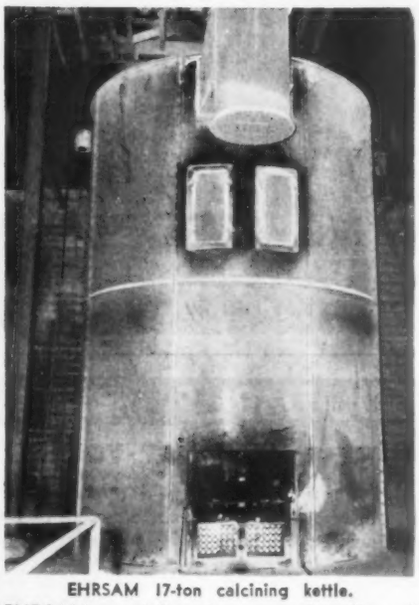
Offices & Representatives throughout the world.

90 to 215 H. P. • 60 to 115 K. W.



MURPHY DIESEL COMPANY
5307 W. Burnham St., Milwaukee 14, Wis.

EHRSAM EQUIPMENT *Leads* for making GYPSUM



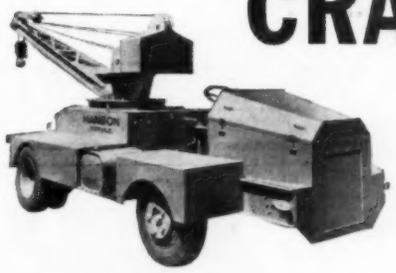
EHRSAM 17-ton calcining kettle.

EHRSAM specializes in a complete line of equipment for making gypsum wall board. Also supplies profit-making machinery for handling and processing many other non-metallic materials.

Write for Bulletin

THE J. B. EHRSAM & SONS MFG. COMPANY
Enterprise, Kansas

HANSON YARD AND DOCK CRANES



Mobile, versatile; one man operation; 2 to 30 miles per hour; 2 to 4 ton lift and carry; full 360 degree swing. A thousand uses in fast, economical material handling. ***Write for descriptive folder Y & D45.***

THE HANSON CLUTCH & MACHINERY CO.
TIFFIN, OHIO

Condor RUBBER PRODUCTS

BELTING
Conveyor, Elevator, Compensated, Transmission, Agricultural and V-Belts. Belting for every Service.

HOSE
Air, Acid, Contractors, Fire, Hydraulic, Oil and Gasoline, Steam, Sand Blast, Suction, Water, Spray and Special Hose. 81 Kinds for 81 Uses.

OTHER PRODUCTS
Chute Lining, Molded Rubber Goods, Industrial Brake Blocks and Lining, Rubber Lined Tanks, Rubber Covered Rolls — Abrasive Wheels, Bowling Balls.

Keep Ahead with **MANHATTAN**

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES AND FACTORIES, PASSAIC, NEW JERSEY

ARMSTRONG-BRAY

GEAR AND WHEEL PULLERS

Essential Tools **Prompt Shipment** because they save hours of time, prevent costly breakage and long shut downs.

STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat treated. 2-arm, 3-arm and special designs. 34 types and sizes.

CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft.

Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

Write for Catalog Sheets

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5386 Northwest Highway
Chicago 30, U. S. A.

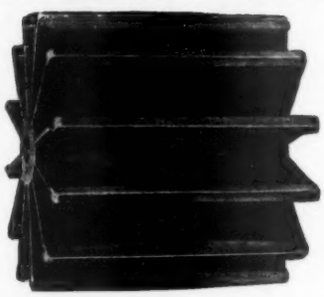
ROUND SQUAROUND* SQUARE HEXAGON PERFORATED PLATE

of every description for maximum productiveness from your vibrating screens.
*Reg. U. S. Pat. Off.

HENDRICK MANUFACTURING CO.
39 Dundaff Street, Carbondale, Pa.
Sales Offices in Principal Cities. Please Consult Telephone Directory.

THOUSANDS OF USERS TESTIFY

that the **Belt-Saver Pulley** saves money and rubber and prevents accidents on their belt conveyors and bucket elevators.



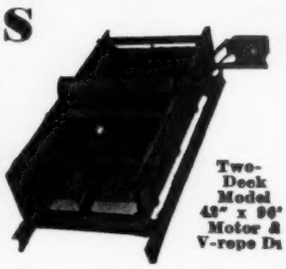
Write for more information!

SPROUT, WALDRON & COMPANY
136 Sherman Street Muncy, Pa.

UNIVERSAL SCREENS

GUARANTEED to give you best results on your most difficult separations.

RUGGED - SIMPLE Construction. **LOWEST in FIRST cost and MAINTENANCE cost.**



Two-Deck Model 43" x 96" Motor & V-rope Dr

Catalog No. 107,—32 pages on Screens and Screening is yours for the asking.

UNIVERSAL VIBRATING SCREEN CO.
RACINE ~ ~ WISCONSIN

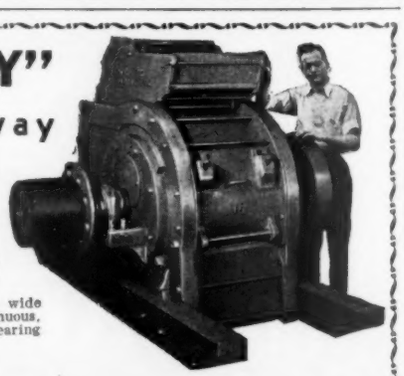
DENVER HYDROCLASSIFIERS

for fine sizing
and desliming problems, this machine has proved very efficient both in metallurgical results and in mechanical operation. Enclosed lifting device and spiral rakes are distinctive advantages. It will do the work of any hydroseparator Write for new Bulletin No. C4A-B

NEW YORK CITY, NEW YORK: 50 Church St. MEXICO, D.F.: Edificio Jokseo, Calle Ejido No. 7
CHICAGO: Suite 1005, 69 W. Washington St. MIDDLESEX, ENG.: 493A, Northolt Rd. S. Harrow
SALT LAKE CITY, UTAH: 727 Meletyre Bldg. RICHMOND, AUSTRALIA: 530 Victoria Street
TORONTO, ONTARIO: 45 Richmond St. W. JOHANNESBURG, S. AFRICA: 8 Village Road

DENVER EQUIPMENT COMPANY, 1400 17th St., Denver, Colorado

Every "DAY" in every way proves it is a SUPER-CRUSHER



"Day" crushers provide wide crushing range and continuous, low-cost operation. Roller bearing equipped.

Send for Bulletin.

Brooks EQUIPMENT & MFG. CO.
KNOXVILLE, TENNESSEE

A Bucket... COLUMBUS...or a Plant

WE HAVE WHAT YOU NEED

. . . for the successful operation of a crushed stone, cement, concrete or sand and gravel plant.

COLUMBUS designs and builds units for material processing and handling, including conveying, elevating, washing, dewatering, and transmission machinery.

Write for Bulletin No. 155

Some territory open for responsible distributors

The Columbus Conveyor Co. Columbus 8, Ohio

Royal E. Burnham

Attorney at Law

Patent and Trade-Mark Causes

511 Eleventh Street, N. W.
WASHINGTON, D. C.

Quarries
Crushing Plants
Cement Plants
Storage Methods
Operating Costs

E. Lee Heidenreich, Jr.
Consulting Engineer
67 Second St., Newburgh, N. Y.
Phone 1828

Operation
Plant Layout
Design
Construction
Appraisals

Diamond Core Drilling

For All Minerals

Tinney Drilling Co.
Grafton, W. Va.

CORE DRILLING ANYWHERE
We look into the earth
PENNSYLVANIA DRILLING COMPANY
PITTSBURGH, PA.

POSITION WANTED

As plant superintendent. Ten years' engineering experience and 18 years of operation and construction of cement plants (wet process).

Box No. 1109, c/o Pit & Quarry Publications
538 So. Clark Street Chicago 5, Illinois

DRILLING CONTRACTORS
PROSPECTING, SAMPLING
BLAST HOLES & CLAY PITS
JUDD & SON
Martin City, (K. C.), Mo.

WANTED

2½ miles track, small gauge.
Gasoline or Diesel Locomotive with cars.
18" x 36" jaw crusher or larger.
≤3 or 4 ft. Symons Cone Crusher.
2—3 cu. yd. Concrete Truck Mixers.
Vibrating Screens, 4' x 8' 2-deck or larger for a new plant, location close Dallas, Texas.

Box No. 1213, c/o Pit & Quarry Publications
538 So. Clark Street Chicago 5, Illinois

POSITION WANTED

Chief Chemist, twenty years experience in Portland Cement Industry, wishes to locate on west-coast in modern cement company or partnership in research laboratory.

Box No. 1111, c/o Pit and Quarry Publications
538 So. Clark Street Chicago 5, Illinois

POSITION WANTED

Stone Plant operating executive, now employed, desires change from operation to machinery sales and service in the cement, stone and construction field. Available 30 days after notice. Some experience in sales; years of operation and plant design experience with this type equipment.

Box No. 1217, c/o Pit & Quarry Publications
538 So. Clark Street Chicago 5, Illinois

WANTED

To purchase or lease small Limestone Quarry or Quarry site in Mid-West.

Box No. 1209, c/o Pit & Quarry Publications
538 So. Clark St. Chicago 5, Ill.

WANTED QUARRY FOREMAN

MAN CAPABLE OF WORKING LABOR AND EXPERIENCED IN QUARRYING SEMI-HARD AGRICULTURAL LIMESTONE.

DERMOT SHEMWELL & SONS
ALBANY, GEORGIA

POSITION WANTED

Cement chemist desires position as Chief or Assistant Chief Chemist. Married, eleven years' experience in cement industry with high early, pozzolan, oil well and masonry cements. Employed but desires change.

•

Box No. 1225, c/o Pit and Quarry Publications
538 So. Clark St. Chicago 5, Ill.

WANTED

2—200 H. P. 3 Bearing Slip Ring Motors
440 V—60 C—3 P.
680 R.P.M.
With Base and complete controls.
3—100 H. P. 3 Bearing Slip Ring Motors
440 V—60 C—3 P.
580 R.P.M.
With Rockwood Base and complete controls.

Box No. 1223, c/o Pit and Quarry Publications
538 So. Clark Street Chicago 5, Illinois

MILL SUPERINTENDENT WANTED

By well known marble producer. Must be skilled in supervising sawing and fabricating marble. Thorough knowledge of the business with experience in handling men. Permanent position. If interested, furnish complete details of background, education, age, experience and references, all of which will be treated in strict confidence.

Box No. 1219, c/o Pit & Quarry Publications
538 So. Clark St. Chicago 5, Ill.

SUPERINTENDENT WANTED

Portland cement manufacturer has opening for Plant Superintendent. Permanent Position with old established company. Our own people know of this ad. In replying give age, education, experience, salary requirements and references. Write

• • •

Box No. 1207, c/o Pit and Quarry Publications
538 So. Clark Street Chicago 5, Illinois

WANTED

Concrete Pipe Machine
Mail specifications and quotations to

Box No. 1115
Pit & Quarry Publications
538 So. Clark St. Chicago 5, Ill.

POSITION WANTED

ENGINEER, 32, Married, wide experience mine, quarry and plant layout and operating engineering, especially non-metallics. Background of development of new properties and complete mechanization of producing properties. Now U. S. Naval Reserve Officer in ordnance engineering. Available February 1, 1946.

Box No. 1227, c/o Pit & Quarry Publications
538 S. Clark Chicago 5, Ill.

WANTED

Chief Chemist for Central American Wet Process Rotary Kiln Cement Plant. Knowledge of Spanish preferred. Housing Facilities and Good Salary. Address reply to:

Box 1215 c/o Pit & Quarry Publications
538 So. Clark St. Chicago 5, Ill.

Quarry Superintendent Wanted

By well known quarrier and manufacturer of marble. Must be skilled in supervising and quarrying dimension marble. Thorough knowledge in erecting derricks and the use and operation of all types of quarry machinery as well as experience in handling men. Permanent position. If interested, furnish complete details of background, education, experience and age and references, all of which will be treated in strict confidence.

• • •

Box No. 1221, c/o Pit & Quarry Publications
538 So. Clark St. Chicago 5, Ill.

WANTED
PLANT SUPERINTENDENT

Familiar with pipe, block or any special concrete product. Must have at least high school education, be mechanically inclined and have pleasing personality. Age limit 48. Postwar opportunity with large concern branching out into full line of products in various sections of the United States and operating on an incentive profit sharing plan. Past record must stand rigid inspection. Include photograph in reply. Address Box 709, care of

•

Pit and Quarry Publications
538 S. Clark Street
Chicago 5, Illinois

WANTED

Middle West Portland Cement Manufacturer wants aggressive young engineer with experience in plant lay-out, construction and operation. Permanent position with excellent possibilities for right man. Address reply to

Box 1117
Pit and Quarry Publications
538 S. Clark Street
Chicago 5, Ill.

WANTED

Superintendent and engineer for a new modern block and ready-mix plant about ready for operation in Northern Indiana. Must have good record and years of experience.

• • •

Box No. 1201, c/o Pit & Quarry Publications
538 South Clark Street, Chicago 5, Illinois

SPEAKING OF GOOD BUYS.....

Here are some of the many outstanding Consolidated Machinery Buys available for Immediate Shipment. When you call on Consolidated you are sure of getting A-1 machinery.

TRUCK CRANE

1—18 ton Truck Crane, mounted on 8-14.00x20 pneumatic tires, Model 255-A, P. & H., equipped with Waukesha Type MZR gasoline engine, 55' steel boom, hydraulic controls. Lifting capacity 18 tons. Manufactured by Harnischfeger Corp., new in 1941. USED FOUR MONTHS ON ONE JOB. With this Crane we can also include a crawler mounting with which this crane was originally furnished.

SHOVEL

1—1 yd. P. & H. Model 600-A Shovel, gasoline, fitted with new crawler treads.

GOOD USED EQUIPMENT—QUICK SHIPMENT RAYMOND PULVERIZERS

2—4 roll Raymond High Side Pulverizers, each equipped with air classifier, one of the "whizzer" type; Raymond exhauster, cyclone collector and inter-connecting piping. For products as fine as 99.9%—325 mesh, with coarser adjustments.

2—No. 0 Beater type—equipped as above—but including automatic throwout attachments and motors.

5—Nos. 3, 1, 00 and 0000—Beater types.

2—No. 70 "Imp" Coal Pulverizers; also No. 45, No. 55 and two Bowl Mills.

BRIQUETTE PRESS

1—Komarek-Greaves, two rolls, 32" dia. x 24" face, with extra shafts and rolls. Rated on coal—25 t.p.h.

CRUSHING ROLLS

1—24"x40" Penna. Crusher Co. Single Roll, also 24"x24" Jeffrey, 24x28" Mead-Morrison, 36"x60" Fairmount—all single roll.

2—36"x16" Allis-Chalmers Type "B" double roll, also 24x14", 42x16" and 54x20" A-C.

DIRECT HEAT ROTARY DRYERS

2—4'x30' American Process, ⅜" shells, excellent condition. Now at Anniston, Ala., and must be removed and shipped quickly. Priced accordingly.

1—5x30' Cummer, mounted on I-beam frame, with furnace, etc.

2—6'x30' Ruggles-Coles, ⅜" shells, for single or double shell operation.

JAW CRUSHERS

1—9"x15" Allis-Chalmers, Blake type.
1—18x36" Farrel-Bacon, Type B.
2—24x36" Traylor, Type A.
1—30x42" Farrel-Bacon, Type B.
1—22x50" Champion.
1—36x54" Buchanan.

HARDINGE CONICAL MILLS

4—6'x22", 6'x36" and two 8'x30" Pebble Mills, all silex lined, continuous.
1—5'x22" Ball Mill, iron lined.
1—6'x12' Rod Mill, straight side, iron lined.

AIR SEPARATORS

5—30", 5', 6', 8' and 14' dia.
1—14' dia. Sturtevant.
1—Model BX-100 Sutton, Steel & Steel Table.

VIBRATING SCREENS

1—Battery of two 3'x5' Tyler Hummers, Type No. 31, TRIPLE DECK, with gen. set.
1—Battery two Tylers, No. 33, single deck.
3—Tyler 4'x5', No. 37, single deck.

CONSOLIDATED PRODUCTS COMPANY, INC.
17-19 PARK ROW NEW YORK, N. Y.
Shops and Yard at Newark, N. J., cover eight acres.

DIESEL ENGINE UNITS

2—450 HP Worthington, 2300 V. 60 cy. gen.
2—400 HP LeRoi, RX1SV (gasoline) eng. only
1—300 HP McInt. & Sey., 480 V. 60 cy. gen.
1—300 HP Gen. Motors, 480 V. 60 cy. gen.
1—150 HP Buckeye 400 RPM engine only.

TRANSFORMERS—1 Ph. 60 Cy.

3—200 KVA G. E. 22000—230/460 V.
3—200 KVA G. E. 13200—480 V. Pyranol
3—100 KVA West 6900—230/460 V
6—200 KVA G E 2400/4160—450 V. Pyranol

Brew, Woltman & Company, Inc.
50 Church St., New York 7, N. Y.

SURPLUS — FOR SALE

In Wisconsin

Thew-Lorain 75-A Combination Shovel and Crane.

In Missouri

Thew-Lorain 75-A Shovel
P&H "400" Combination Shovel and Dragline.

• •

MANLEY SAND COMPANY
Rockton, Ill.

SLIPRING MOTORS

HP	Make	Type	Volts	Speed
600	Wtg.	CW1416	2300	343
600	A. C.	ANY	2200	1180
500	G. E.	I-P	2080	450
500	G. E.	I-P	440	450
300	G. E.	I-M	2200	514
150	A. C.	ARY	440	880
150	Wtg.	CW	440	580
150	G. E.	I-M 3b.	2200	585
100	Wtg.	Vertical	2200	1160
100	Ideal	AV-A45031	2200	720
100	Wtg.	HF	440	230
75	Nwtn.	HW-50	220	1740
75	G. E.	I-M	440	900
60	A-C	ARY	220	690
50	G. E.	I-M	220	855
50	A-C	ARY	220	690
50	Wtg.	CW	440	570
50	F.M.	HBC	440	900
50	G.E.	MT	2200	600

Send for our new catalog just off the press.

• •

CHICAGO ELECTRIC COMPANY
1329 West Cermak Rd., Chicago 8, Illinois

ASK YOURSELF FRANKLY
"WILL IT PAY TO SELL MY BUSINESS?"

TODAY'S unusual industrial conditions may well justify you in turning your business—FOR CASH—to new management. As a reputable operating organization of long experience, with substantial capital, we can bring opportunity for increased company expansion and greater profit . . . while you are relieved of heavy expense and worry. Personnel held intact whenever possible.

• *ALL discussions and negotiations strictly confidential*

Box 1226, 1474 Broadway, New York (18), New York

SPECIAL OFFERING

1—New 10" Superior McCully (Allis Chalmers) steel frame fine reduction gyratory crusher with 100 HP electric motor.
1—Factory remanufactured Acme 18"x32" solid steel frame jaw crusher.
1—Factory remanufactured Acme 16"x32" solid steel frame jaw crusher.
1—New 72" diameter by 16' Allis Chalmers revolving screen with manganese steel sections.

ACME ROAD MACHINERY COMPANY
Frankfort, New York

FOR SALE

COMPRESSORS:

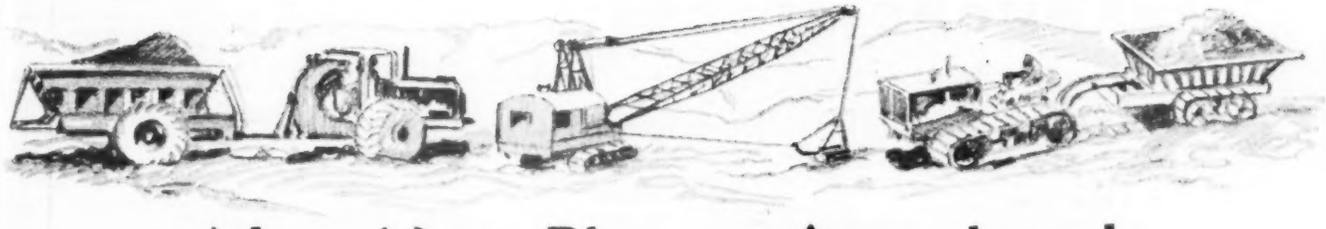
445 cu. ft. Gardner-Denver, mod. WBH 2-stage, elec. driven. Package unit, like new.
9 x 8 Ingersoll-Rand BRI stationary compressor, with or without power.
1050 cu. ft. Sullivan Angle Compound compressor, direct connected to 240 HP Fairbanks model 32 engine.

POWER UNITS

100 HP Murphy Diesel mod. ME-4, 1200 RPM
135 HP Murphy Diesel mod. ME-6, 1200 RPM
135 HP Fulton Diesel, 600 RPM
130 HP Caterpillar Diesel, D-13000
150 HP Fairbanks, 8¾x10½ dredging engine
240 HP Fairbanks, mod. 32, cold start
300 HP Fairbanks, type Y, style V, with clutch & pulley.

WHERE YOU WILL FIND WHAT YOU WANT IN POWER EQUIPMENT

GENERAL MACHINERY & EQUIPMENT COMPANY
809 Woodland Ave. Kansas City 6, Mo.
Telephone Victor 0018



Near Your Plant — Anywhere!

ECONOMY EQUIPMENT

On PAY-AS-YOU-GO PLAN

Having Power Shovels, Draglines, Scrapers, Tractors (all types) and Trailers listed throughout the United States, we may be able to outfit your plant with equipment now situated near your operations.

If not, we can at least provide what you need within a reasonable rail or trailer haul. Look over the lists below and see what is available NOW. Much of it may be secured on ECONOMY COMPANY'S easy PAY-AS-YOU-GO PLAN.

Ask about this Economy Plan. Take advantage of ECONOMY Service by telephoning us COLLECT and tell us all about your needs.

SHOVELS
DRAGLINES

26 Yd. Marion Shovel and Dragline combination. 115' shovel boom. 80' Dipper Stick. 200' dragline boom.

4/5 Yd. Bucyrus-Erie 120B Electric Shovel. Serial up in 10000s. Manganese steel dipper. Ward-Leonard Controls. Condition real good.

4 Yd. Bucyrus-Erie Model 100B Electric Shovel and Dragline combination. 105' Boom. Two dragline buckets. Serial in high 11000s. Spare parts. Excellent condition.

4 Yd. Marion Electric Shovel with extra long shovel boom and dinner stick.

4 Yd. Diesel P&H Model 900 Dragline. 100' Boom. Three drums. Excellent condition. Ready for shipment.

3 Yd. Diesel Bucyrus-Erie 52B Dragline. Serial number in 11400s. 80' Boom.

3 Yd. Monighan Dragline with 80' Boom and $3,000 worth of spare parts.

3W Monighan at a bargain price—only $15,900. 3 yd. dragline—diesel engine and also electric motors.

2¾ Yd. Page Diesel Dragline. 110' Boom. Exceptionally nice condition. Reasonably priced.

2½ Yd. Diesel Dragline. Excellent condition. Koehring Model 801 with 2½ yd. dragline bucket. Price attractive.

2½ Yd. Diesel Osgood Model 908 Dragline. 85' Boom. Two dragline buckets each 2½ yd. capacity. Powered by Buda Diesel Engine Model LD1742. Serial number of machine is in 3000s. Offered in rebuilt and guaranteed condition. **This is a real buy.**

SPECIAL

2½ Yd. Northwest Model 95 Diesel Dragline. Serial number up in 5400s. 36" tracks. 80' dragline boom. Murphy Diesel Engine. In exceptionally good condition.

2½ Yd. Diesel Northwest Model 80D Dragline. 80' Boom. Built in 1939. Brand new Murphy Diesel Engine installed 1944. Machine rebuilt 1945.

2½ Yd. Northwest 80 Shovel and Dragline combination. Gas powered. Entirely rebuilt.

2½ Yd. Northwest Model 8 Dragline. 90' Boom. Twin City Engine. Serial number in 4000s.

2 Yd. Bucyrus-Erie Diesel Dragline Model E-2. 60' dragline boom. Serial number in 11000s.

2 Yd. Diesel Koehring Model 703 Dragline. 80' Boom. 2 yd. dragline bucket. Excellent condition.

2 Yd. Diesel Koehring Model 801 Shovel and Dragline combination. Rebuilt.

1¾ Yd. Lorain 77 Diesel Stripping Shovel. 35' shovel boom. 50' dragline boom. 1¾ yd. dragline bucket. 1¾ yd. dipper bucket. Caterpillar D13000 Diesel Engine. Lorain Model 77. Price extremely attractive.

Marion Diesel Model 471 Shovel and Dragline. 1¾ yd. for shovel work and 2½ yd. for dragline operation. 80' Boom.

1¾ Yd. Marion 471 Diesel-Electric Shovel and Dragline combination. 60' Boom. 2½ yd. dragline bucket. 1¾ yd. shovel attachment. Entirely rebuilt.

1¾ Yd. Diesel Bucyrus-Erie Shovel. 2¼ yd. dragline bucket. 80' boom. **Buda Diesel Engine.**

1¾ Yd. Diesel Osgood Model 906. 35' shovel boom. 30' dipper stick.

1¾ Yd. Diesel P&H Model 775—extra wide and extra long cats. A real buy!

1½ Yd. Diesel Lorain 77 Shovel and dragline combination. Serial number in 5100s. Powered by Caterpillar Diesel Engine D11000.

1½ Yd. Diesel Lima 602 combination shovel and dragline.

1½ Yd. 1941 Diesel Northwest Model 6 Shovel and Dragline with Caterpillar Diesel Engine. Excellent condition.

1½ Yd. Northwest Shovel and Dragline combination Model 6. 75' dragline boom.

1¼ Yd. Northwest Model 5 Shovel and Dragline combination. Serial number in 2800s.

1¼ Yd. Lima Model 101 Shovel and Dragline. 65' boom. 22' shovel boom. 1½ yd. dipper bucket. 1¼ yd. dragline.

1¼ Yd. Linkbelt K-35 Backhoe and Crane Combination. Condition exceptionally good. Price very attractive. Only $6,950. Serial number in 1300s.

1¼ Yd. P&H Model 600A Shovel, Crane & Dragline Combination. Serial number in 4060s.

1 Yd. Lorain 60. An exceptional buy. Entirely rebuilt. New cab. Waukesha 4-cyl. gas engine. 1 yd. manganese dipper.

1 Yd. Northwest Model 4 Shovel. Serial number in 2850s. Price very attractive.

1 Yd. Northwest Model 4 Shovel.

¾ Yd. Northwest Model 3 Shovel and Crane Combination. $6,300.

¾ Yd. Diesel Linkbelt Speeder Model B-5. Serial number in 1150s. Caterpillar D8800 Diesel Engine.

¾ Yd. 1939 Diesel Linkbelt Speeder Model B5 Shovel and Dragline combination. Rebuilt and guaranteed. Caterpillar D8800 Diesel Engine. Brand new tracks.

¾ Yd. Marion 331. Serial number up in 6700s. Rebuilt condition. A real bargain.

¾ Yd. 1941 Koehring Model 251 Shovel, Crane and Dragline Combination.

¾ Yd. 1940 Lorain Model 40 Shovel, Backhoe and Crane Combination. ChainCrowd.

¾ Yd. Koehring Model 301 Shovel and Crane Combination.

¾ Yd. 1938 General Shovel. Serial in 1800s.

¾ Yd. General "Invincible". Serial in 1600s. Shovel, Backhoe, Crane-Dragline combination with 6-cylinder Buda gas engine. Exceptionally good condition.

¾ Yd. 1941 Koehring Model 303. Serial number up in 2200s. Backhoe, Shovel, Dragline-Crane with clamshell bucket. Condition excellent. Price reasonable.

¾ Yd. 1938 Bay City Model 45 Shovel, Backhoe and Dragline Combination. 45' Boom. Fairleads. Two Buckets. Price very reasonable.

½ Yd. Insley Model K-12. Two (2) very late models; one is a backhoe and crane-dragline combination with a ½ yd. clamshell bucket. The second unit is a backhoe and crane combination with fairlead attachments for dragline work.

½ Yd. Linkbelt LI96 Speeder B3. A Real Bargain. Serial number up in 960s. Shovel and dragline combination. Ready for immediate shipment.

⅝ Yd. Bay City Model "K" Backhoe and Crane Combination. 30' Boom. Rebuilt.

⅝ Yd. Northwest Model 2 Shovel and Dragline. A real buy!

⅜ Yd. Linkbelt Speeder Model LS-40 Shovel and Backhoe Combination. Serial number LS-505. Condition good and can be shipped as a shovel or as a shovel and backhoe.

⅜ Yd. Bucyrus-Erie Model 10B Shovel.

⅜ Yd. Bucyrus-Erie Model 10B Shovel, Dragline and Crane. Bucket.

SPECIAL

⅜ Yd. Linkbelt Speeder-Diesel on Caterpillar D6 wide gauge tractor. It has a speeder rigging and log-loading attachment and a 26' swinging boom. Rebuilt entirely from top to bottom—ready for immediate shipment.

⅜ Yd. Hanson Shovel.

⅜ Yd. ¾ Swing Bay City "Pup" Shovel and Backhoe Combination.

Two (2)—⅜ Yd. Byers Bearcats.

TRACTORS

1—**International TD14 Tractor**—built in 1941—with angledozer and bulldozer attachments. Excellent condition.

1—**Caterpillar D6 Diesel Tractor**—built in 1942—with Hyster Winch. Rebuilt condition.

5—**Caterpillar D8 Diesel Tractors with bulldozers.** Condition real good. We can also supply scrapers with these tractors at an extra cost.

3—**Caterpillar RD8 Tractors** with 12 yd. scrapers.

1—**7M Streamlined Caterpillar Diesel Tractor** with double drum power control unit and **10 Yd. LeTourneau Scraper.**

1—**International TD6 Diesel Tractor.** Entirely rebuilt and guaranteed.

1—**D6 Caterpillar Tractor with LeTourneau Angledozer**—built in 1940. Condition exceptionally good.

2—**D7 Caterpillar Diesel Tractors** with 8-10 yd. scrapers. Condition real good. Ready for immediate shipment.

A Real Bargain . . . 1—**Model FD Cletrac Diesel Tractor**—in good operating condition. Serial number in 6600s.

TOURNAPULLS: 3—Tournapulls Super "C"—built the latter part of 1941.

REAL BUYS IN

TRUCK CRANES

One (1)—10-Wheeler Linkbelt Speeder LS-40—8-10 ton capacity. Pneumatic tires. Outriggers. Entirely rebuilt and guaranteed. Crane boom and shovel attachment. This is a real buy.

One (1)—10-12 Ton Northwest Model 2 truck crane—ten wheeler. 45' boom. Shovel and backhoe attachments. Clamshell bucket. Outriggers. Ten tires 9.75x24. Buda gas engine. Fuller transmission. Rebuilt condition.

One (1)—15-18 ton P&H 400 Truck Crane. 50' Boom. Ten tires. Shovel attachment.

One (1)—1 yd. (18-20 tons) Byers Truck Crane on ten wheeler specially constructed chassis. Condition very good. A real buy.

SPECIAL

1—**12-Ton Linkbelt Speeder Truck Crane**—six pneumatic tires 11.00x24 A.C. Mack chassis. A real buy.

1—**Universal Truck Crane** with ten pneumatic tires 9.00x20. 30' Boom. Waukesha gas engine. Condition real good and price excellent.

1—**Michigan Truck Crane and Shovel.** Six pneumatic tires.

1—15-18 Ton Northwest Truck Crane, 10 pneumatic tires.

ECONOMY COMPANY, INC.

49 Vanderbilt Ave., New York, N. Y. **Tel. MUrray Hill 4-2294-8292-2295-2296**

STANHOPE OFFERS!

AIR COMPRESSORS
BELTED: 355, 528, 676, 1000, 1300 & 1570 Ft.
ELECTRIC: 478, 676, 807, 1302, 1722 & 2850 Ft.
DIESEL: 105, 315, 420, 603, 807 & 1000 Ft.
PORTABLE GAS: 110, 160, 220, 310, 540 & 1300 Ft.
STEAM: 49, 310, 528, 1300 & 2200 Ft.

GRAPPLES & BUCKETS
50 Skips and Battleship Type, 2 to 6 Yds.
5 Owen & Bucyrus Rock Grabs.
CLAMSHELL: ½, ¾, 1, 1½, 2 Yds. & 3 Yds.
ORANGE PEEL: ¾, 1, 1½, 2 & 3 Yds.
DRAGLINE: ½, ¾, 1, 1½ & 2 Yds. Cap.

CRANES & DRAGLINES
5 Ton BROWNHOIST, 30 Ft. Boom Gas.
12 Ton NORTHWEST 50 Ft. Boom Gas.
15 Ton P&H, 50 Ft. Boom Gas.
16 Ton Speedcrane, Gas, 50 Ft. Boom.
25 Ton BROWNING & 30 Ton AMERICAN Locomotive.
25 Ton LINK BELT K-48 Electric, 70 Ft. Boom.
2 Yd. Monighan Electric 60 ft. Boom Dragline.
3 Yd. Monighan Diesel Dragline.
5 Yd. Monighan Diesel Dragline.

CATERPILLAR SHOVELS
½ Yd. P. & H. Gas & ¾ Yd. Insley Gas.
¾ Yd. KOEHRING Gasoline.
¾ Yd., 1¼ Yd., 2 Yd., 4 Yd. & 8 Yd. MARION Electrics.
1 Yd. NORTHWEST Gas & 7/8B2 Steamer.
1½ Yd. BUCYRUS 41B Steamer.
1½ Yd. KOEHRING 601—Gas.
4 Yd. 120B Bucyrus Elec.

DUMP CARS
46—KOPPEL, 1½ Yd., 24 & 30 In. Ga., V Shaped.
15—2 Yd., 3 Yd., 4 Yd. 36 In. Ga.
20—8d. Ga. 12 Yd., 16 Yd., 20 Yd. & 30 Yd. Cap.

BALL, ROD AND TUBE MILLS
6x8 Continuous Pebble Mill.
5x5 Batch Mill.
5'x22" HARDINGE CONICAL Dry Ball Mill.
6'x22" HARDINGE CONICAL Pebble Mill.
4x8, 8x6, & 10x9 Straight Ball Mills.
8'x22" HARDINGE CONICAL Ball or Pebble Mill.
4x16, 5x18, 5x22, & 6x22 Tube Mills.
3½x8 & 5x7 Air Swept Tube Mills.
2x4½, 5x12 and 6x12 ROD MILLS.
4x16 Smidth Tube Mill Silex.
5½x20 Smidth Tube Mill Mang. Lining.
5½x18 F & M Tube Mill Silex.

PULVERIZERS
No. 1 Sturtevant Ring Roll.
RAYMOND Auto, Pulverizer No. 0000, 0 & 3.
RAYMOND Imp Mills No. 4, 32 & 55.
GRUENDLER XXB Mill & Jay Bee No. 3 & 4.
RAYMOND 4 & 5 ROLL MILLS & 5 Ft. Chaser Mill.

SEPARATORS AND COLLECTORS
14 ft., 8 ft. and 12 ft. Separators

ROLL CRUSHERS
36x60 Fairmont Single Roll.
36x20 Diamond Double Roll.
24x24 & 36x16 & 36x20 Diamond Double Roll.

JAW CRUSHERS
10x8, 13x7½, 14x7, 15x9, 15x10, 16x9, 16x12, 16x10, 18x11, 20x8, 20x6, 20x10, 20x12, 20x11, 26x12, 30x15, 30x13, 36x30, 36x18, 36x14, 36x15, 36x9, 36x6, 38x18, 36x10, 36x24, 42x9, 48x36, 60x42, 84x66, 36x16, 9x36.
30x10 Gruendler Roller Bearing.

CONE & GYRATORY CRUSHERS
18 in., 24 in., 30 in., 36 in. and 48 in. Symons Disc.
21K & 18N Allis Chalmers.
4—10 TZ Traylor 4 Ft. Gyratory.
4—Nos. 5, 3 & 6 Austin Gyratory.
2—Traylor T-12 Bulldog Gyratory.
8 in. Traylor T. Gyratory, Telsmith No. 9.
17 Gates K—Nos. 3, 4, 5, 6, 7½, 8 & 9½.
10 Inch Austin Model 105.
8, 10 & 13 Inch Superior McCullys.
KENNEDY: Nos. 19, 25, 27, 39 & 49.
16" Traylor.
7 Ft., 5 Ft., 4 Ft., 3 Ft. and 2 Ft. Symons Cone.

MIXERS—PAVERS
5—1 yd. 2 yd. & 3 yd. Mixers.
3—Ransome & Rex 34E Dual Drum.
5—Koehring & Smith 27E Pavers.

HOISTING ENGINES
7 Gasoline 15, 40, 60 & 100 H.P.
17 Steam 7x10, 8¼x10 and 10x12.
8 Electric 20, 35, 50, 60, 100 & 150 H.P.

HAMMER MILLS
4 Jeffreys: 24x18-A, 36x24-B, 42x36-E & 42x48-B.
Williams No. 1 Jumbo Jr., & No. 6 Universal.
Nos. 4, 6 & 8 Williams Jumbo.
No. 36 Am. Ring Roll.
Greundler No. 6X.

ASPHALT EQUIPMENT
7—750 & 1000 Gal. Distributor Trucks.
3—1000 Lb. & 2000 Lb. Pug Mixers.
6—3, 5, & 10 Ton Asphalt Rollers.
5—½, 1, & 2 Ton Asphalt Plants.

DIESEL ENGINES
60 HP Fairbanks Morse.
140 HP Fairbanks Morse.
200 HP Atlas.
225 HP Chicago Pneumatic

DIESEL GENERATORS
480 K.W. Cooper Bessemer 2400 v.
343 K.W. F.M. 3/60/480 v.
240 K.W. F.M. 3/60/2300 v.
300 K.W. Worthington 3/60/2400 v.
125 K.W. F.M. 250 v. D.C.
80 K.W. Busch Sulzer 2300 v.

RAYMOND MILL
5 Roll High Side.

CONVEYOR PARTS
BELT: 1000 Ft. 60 In., 700 Ft. 42 In., 600 Ft. 36 In., 800 Ft. 30 In., 1642 Ft. 24 In., 517 Ft. 20 In., 297 Ft. 18 In., 1000 Ft. 14 In. & 16 In.
IDLERS: 36 In., 30 In., 24 In., 20 In., 18 In.
Head & Tail—Pulleys—Takeup for all sizes.
Steel Frames: 2,000 Ft. 24 In., 30 In. & 36 In. Sections.

ROTARY DRYERS AND KILNS
36 In. x 20 Ft., 3 Ft. x 30 Ft., 4 Ft. x 30 Ft., 54 In. x 30 Ft., 42 In. x 24 Ft., 5 Ft. x 30 Ft., 5 Ft. x 16 Ft., 5 Ft. x 60 Ft., 6 Ft. x 60 Ft., 6 Ft. x 70 Ft., 70 In. x 40 Ft., 5x30 & 8x84 Double Shell Dryers, 8x110, 7½x100, 8x125 & 10x20 Kilns.

STEEL DERRICKS
GUY: 8 Ton 85 Ft. Boom, 15 Ton 100 Ft. Boom, 20 Ton 115 Ft. Boom, 50 Ton 100 Ft. Boom.
STIFF LEG: 5 Ton 70 Ft. Boom, 15 Ton 100 Ft. Boom, 25 Ton 100 Ft. Boom, 75 Ton 135 Ft. Boom.

LOCOMOTIVES
DIESEL: 7—4½, 8 and 15 Ton.
GASOLINE: 3 Ton, 5 Ton, 8 Ton, 12, 14 & 30 Ton.
STEAM: 9 Ton, 20 Ton, 40 Ton, 60 Ton & 80 Ton.
ELECTRIC: 2 Ton, 5 Ton, 8 Ton, 17 Ton & 40 Ton.

SCREENS
VIBRATING: 2x4, 3x6, 2x8, 3x8, 3x5, 4x5, 4x8, 4x10, 48x72. HUMMER, ROTEX, NIAGARA & ROBINS, LINK BELT & HURON.
REVOLVING: 3x12, 3x16, 3½x18, 3x24, 4x16, 4x20, 4x23, 4x24, 5x30, 5x20, 6x20.

STEEL STORAGE TANKS
35—4000, 5000, 6000, 8000, 10000, 15000 and 20000 gal. cap. Horizontal and Vertical.
6—2500, 5000 and 10000 bbl. Vertical.

ASPHALT TANKS
15—8000, 10000 and 20000 gal. cap. with heater coils.

RAILROAD CARS
100—8000 & 10,000 gal. cap. Tank Cars.
12—50 Ton Cap. Battleship Gondolas.
80—50 Ton Cap. Flat Cars.
75—40 Ton Box Cars.

SAUERMAN DRAG AND SLACKLINES
1—¾ yd. Gas 1—1½ yd. Electric
1—1 yd. Electric 3—2 yd. 3 yd. & 4 yd. Electric

WHIRLEY CRANES
5 Clyde 75 to 100 Ft. Boom.

DRILL SHARPENERS
5 I.R. 4K Shank Grinders.
6 Ingersoll-Rand 54, 40, 50 & 34's.
7 Sullivan Class A, & C.
8 Gardner-Denver 3A & No. 6DS.

MINE LOADERS
5 Eimco, GD, & Conway.

(Cable Address: "STANEQUIP" New York)
Lincoln Bldg., 60 E. 42nd St., New York, N. Y.
Murray Hill 2-3075 or 2-3076

R. C. STANHOPE, INC.

- 24 x 50 Champion Jaw Crusher, rebuilt with new manganese jaws.
- 24 x 36 Farrel Jaw Crusher, type A. and B.
- 15 x 36 Farrel Jaw Crusher with new manganese jaws.
- 8 x 36 Farrel Jaw reduction Crusher.
- 8 x 36 Acme Jaw Crusher, portable on steel wheels.
- 13 A Telsmith Gyratory Crusher.
- 3' Symons Crusher, standard.
- Barber-Greene Bucket Loader with 18" buckets on caterpillars with worm feed and 4 cylinder Buda gasoline Engine, also self starter.
- 1—Link Belt Bucket Loader with 12" buckets, 3 hp Electric motor on steel wheels.
- 24' x 5' Traylor, positive drive, heavy duty revolving screen.
- 18' x 4' Telsmith Ajax revolving screen.
- 16' x 3' Acme trunion drive revolving screen.
- 12' x 3' Symons double deck vibrator screen.
- 12' x 4' Telsmith double deck vibrator screen.
- 10' x 5' Niagara single deck vibrator screen.
- 1¼ yd. Blaw Know Clamshell material handling bucket.
- 2 yd. heavy duty Manganese Shovel Bucket.
- 14' x 30" Lewis Foundry Machine Co., Worm Washer with steel trough.
- ⅝ yd. Sauerman Dragline hoist with 25 hp. Electric motor.
- Double Drum Novo hoist with 50 hp. Novo Gasoline Engine.
- 66' center 30" Belt Bucket Elevator with 12 ply belt, continuous.
- 45' center 14" Chain Bucket Elevator with 102 chain, continuous.
- 30' center 16" Chain Bucket Elevator with 102 chain, continuous.
- 95' center 36" Belt Conveyor with 8" channel iron frame, with or without belt.
- 145' center 30" Belt Conveyor with 6" channel iron frame, with or without belt.
- 116' center 30" Belt Conveyor with 6" channel iron frame, with or without belt.
- 128' center 24" Belt Conveyor with 6" channel iron frame, with or without belt.
- 164' center 24" Belt Conveyor with 6" channel iron frame, with or without belt.
- 112' center 18" Belt Conveyor with 6" channel iron frame, with or without belt.
- 82' center 18" Belt Conveyor with 6" channel iron frame, with or without belt.
- 45' center 18" Belt Conveyor with 6" channel iron frame.
- 160'—111 Rex chain, very good condition.
- 133'—110 Stephen Adamson chain, like new.

FRANK A. KREMSER & SONS, INC.
3435-45 North 5th Street
Philadelphia 40, Pennsylvania
Office phone, Regent 7272 Night phone, Hancock 7969

NEW CONVEYOR BELTING IN STOCK

539' Quaker 16" 4-Ply, 28 oz.	257' Quaker 24" 5-Ply, 28 oz.
264' Quaker 18" 4-Ply, 32 oz.	1290' Quaker 24" 4-Ply, 32 oz.
125' Quaker 20" 4-Ply, 28 oz.	935' Quaker 24" 5-Ply, 28 oz.
490' Quaker 20" 5-Ply, 28 oz.	150' Quaker 36" 6-Ply, 28 oz.

Conveyor belting delivery from the factory is still tough.

Better anticipate your requirements now—troughing rolls, head and tail pulleys, etc., now in stock.

EIGHMY EQUIPMENT COMPANY
526 W. State St. Rockford, Illinois

$500,000.00 LIQUIDATION SALE

Contractors Mining and Tunneling Equipment
Located—5101 W. State Street, Milwaukee, Wis.

Air Compressors
Blowers & Ventilating Equipment
Excavating Buckets
Tunnel & Mine Cars
Concrete Mixers
Pavers & Placers
Mine & Elevator Hoists

5—Model 60 Conway Mucking Shovels 36" gauge, dipper cap. 13½ cu. ft. 5 loading cycles per min. loading cap. 70 CFM, conveyor belt 28" wide, cap., 200 CFM, tramming speed forward 176 FM, reverse 120 FM, radius of minimum curve 20', machine powered by 60 HP U. S. Ball Bearing motors, 3/60/440.

Trench Diggers
Mucking Shovels
Locomotives
Light Plants
Pumps
Steel Sharpeners
Welding Machines
Well Point Systems

HUNDREDS OF MISCELLANEOUS ITEMS
Send for Free, Illustrated, Descriptive Circular

INDUSTRIAL PLANTS CORPORATION
316 S. LaSalle St. Chicago 4, Ill.

COMPLETE CRUSHING PLANT FOR SALE

1—Worthington 24x36 crusher with 100 hp slip ring motor, 695 rpm. Excellent condition.

1—36"x100' conveyor with 20 hp motor.

1—New Holland 3030 reduction mill, with 100 hp slipring motor.

1—Telsmith 32B gyratory crusher with V-belt drive and 50 hp slip-ring motor.

2—18"x8"x62½' bucket elevator with 20 hp motor.

1—Telsmith 3'x6' double deck screen with 5 hp motor.

1—Good Roads 3 deck 3'x6' screen with 7½ hp motor.

1—3'8" dia. x 20' revolving screen.

1—New Holland 16x16 double roll crusher with 20 hp motor.

1—Penna. class 3A, 12x10 compressor with 5'x10' air receiver.

1—Ingersoll Rand type ER1, 7x6 compressor.

1—Good Roads 1040 ball bearing fine reduction crusher with new bearings, new side plates, new cheek plates. Excellent condition.

1—Cedar Rapids 9x36 overhead eccentric shaft type crusher.

• • •

L. B. SMITH, INC.
Camp Hill, Pa. Harrisburg 7331

REBUILT EQUIPMENT — IMMEDIATE DELIVERY

OWNED BY US AND RECONDITIONED IN OUR PLANT

AIR EQUIPMENT

Sullivan 160'—2 stage portable Compressor.....$1000.00
Chic. Pneu.—160'—2 stage portable Compressor.... 1250.00
Chic. Pneu.—210'—2 stage portable Compressor.... 1750.00
Schramm 360'—Stationary—No Power..... 400.00
Drifters—Drills—Breakers—Tampers, etc.

LIGHT PLANTS — GENERATORS

1½ K.W. Kohler—D.C..... 250.00
5 K.W. " D.C..... 500.00
20 K.W.—Westinghouse—Wisconsin Engine on pneu. tired Trailer..... 750.00
37.5 KVA—Intl. Diesel..... 2750.00

HOISTS & TOWERS

Clyde 40 H.P. Double Drum Waukesha Engine... 1100.00
Thomas—single drum—no power..... 750.00
Clyde 25 H.P. double drum—Waukesha Engine... 800.00
American 8¼x10—3 drum Boiler..... 1750.00
Lakewood & Archer Towers—60 to 300 ft.

SHOVELS & CRANES

Byers—¾ Yd. Shovel—Waukesha 6 cyl. Engine... 7000.00
Crane—Tractor mounted—on solid R.T. wheels—12' boom 1000.00

MISCELLANEOUS

Batcher—1 Yd.—3 comp. with scales.....$ 750.00
Bucket—Hayward—2½ Yd. Clam..... 900.00
" ¾ Yd. Dragline—Light..... 300.00
Sauerman ½ Yd. Crescent Scraper with Double Drum Gas Hoist..... 1250.00
Dempster Dumptor & Brooks Load Luggers..... $500.00- 700.00
Clyde 5 ton Steel Guy Derrick..... 500.00
Ord Road Finishers—10-12 ft. with transp. wheels. 750.00
Alemite Port. Greasing Outfit..... 1000.00
Jaeger & Koehring 7-S—10-S—14-S Mixers
Pile Hammers—Nos. 3, 6 and 9
Pumpcrete Outfit—No. 160—300' Pipe
PUMPS—TRIPLEX—GASOLINE POWER—80 GPM. @ 400#—PORTABLE..... 750.00
ROLLER—10 ton Hercules—6 cyl. Engine—Scarifier 3000.00
ROLLERS—Steam—Buffalo Spgfld—Tested..Each 750.00
SAND BLAST MACHINE—Pangborne..... 300.00
PLATFORM LIFT TRUCK—2000 pd. cap. Gasoline Power 500.00
1000 H.P. G.E. Slip Ring Motor & Control..... 4500.00
TRENCHER—Pioneer—18" Buckets—end discharge—cut to 12 ft..... 6000.00

SERVICE SUPPLY CORPORATION

2020 W. Erie Ave. *"SERVICE SINCE 1916"* **Philadelphia, Pa.**

COMPLETE STOCK LIST ON REQUEST

FOR SALE

1—3 ton per hour Kuntz Hydrator
1—5 ton per hour Kuntz Hydrator
Each replaced for larger sizes. These are rebuilt and 100% efficient—90% new.
1—3 ton per hour Clyde Batch Hydrator
1—6 ton per hour Clyde Continuous Hydrator
We have a number of lime feeders and a number of hydrate feeders.
1—2½ yard size dump car 30" gauge track. Track gauge can be made to suit.
1—Portable Ingersoll Rand Air Compressor—315 cu. ft. per minute. Waukesha engine. First class condition—ready for use.
One 278 Ransome Mixer on rubber tires—Good condition.
One 12 Gallon Road Grader 12' Blade—Excellent condition.

Lime & Hydrate Plants Co.
50 S. Beaver Street, York, Pennsylvania

STONE CRUSHERS

15 x 24, 18 x 32, 24 x 36.

COMPLETE STONE CRUSHING PLANT

including:
24 x 36 crusher, reduction mill, gyratory crusher, bucket elevators, screens, etc.

PUMPS

4" and 6", centrifugal, gas driven. Rebuilt—very low price.

THE INDUSTRIAL EQUIPMENT CORP.
705 First Nat. Bk. Bldg., Pittsburgh 22, Pa.
Warehouse: Carnegie, Pa.

FOR SALE

Williams No. 7 Jumbo Crusher, 5 years old. Excellent condition. Dixie No. 3030 Mogue Jr. Crusher. A-1 condition. Good for Ag Limestone.

•

Box 1205, c/o Pit & Quarry Publications
538 So. Clark St. Chicago 5, Ill.

GOOD USED TRUCKS

'42 & '43 Brockways 7½-ton 6 wheel drive with ten 12.00x20 tires, 200 HP gas or Cummins Diesel Engines
'42 & '43 Whites 6-ton 6 wheel drive with ten 10.00x22 tires, 175 HP gas or 200 HP Cummins Diesel Engines
'41 '42, '43 GMCs 2½-ton 6 wheel drive with ten 7.50x20 tires, Cargo or 5 yd. Dump Body or as tractors
'41 Chevrolets 1½-ton 4 wheel drive with six 7.50x20 tires, Cargo Body
'44 Reliance Semi-Trailer, Panel Cargo Body, 7-ton, with GMC Tractor

•

KEN ROYCE COMPANY
Motor Sales Division
185 Bayshore Blvd., San Francisco 24, California
VAlencia 5121

FOR SALE

1—WHITCOMB DIESEL OPERATED LOCOMOTIVE. 36 in. gauge. Weight 20 tons. Completely rebuilt and guaranteed.

1—CHICAGO PNEUMATIC Electric Driven Air Compressor. Direct connected to synchronous motor. 1850 Cu. Ft. per minute.

1—INGERSOLL RAND Electric Driven Air Compressor. Direct connected to synchronous motor. Capacity 1568 Cu. Ft. per minute.

Atlantic Equipment Company
503 Broad Street Station Bldg.
Philadelphia 3, Pa.
Rittenhouse 8583

2—Digger, Clay, Ingersoll-Rand, Size 73
1—Mine Sampler, Ingersoll-Rand, Size 275
1—Holder-on, Chicago Pneumatic, Model A, Size 1¼"
2—Holder-on, Ingersoll-Rand, Ser. 10675, Size 4
1—Holder-on, Ingersoll-Rand, Ser. 10739, Size 2
5—Hammer, rivet, Chicago Pneumatic, Model 90, Size 1¼"
2—Hammer, rivet, Chicago Pneumatic, Model 80X, Size 1⅜"
4—Hammer, holder-on, Chicago Pneumatic, Model 90 Boyer, Size 1¼"
7—Hammer, rivet, Chicago Pneumatic, Model 90
75—Used Steel-Brooks Load Lugger Buckets; 1½ yds. capacity, V shaped bottoms—rounded, with ring hooks.

CLINE & DOOCHIN
Yards: 1014 Third Avenue North
Nashville, Tennessee

GEORGE HAISS MANUFACTURING CO., 142nd & RIDER AVE. NEW YORK, 51, N. Y.

TODAY'S BEST VALUES

20/40 Ton Steel Stiffleg Derrick
10 Ton 100 ft. Boom Steel Guy Derrick
10 to 100 ton Gas and Diesel Locomotives
15 to 40 ton late model Locomotive Cranes
50 to 1200 HP Diesel Power Plants
30 HP to 2100 HP Steam Boilers
200 ft. to 3000 cu. ft. Air Compressors
15 to 500 HP Hoists, 1, 2 and 3 Drum
¾ yd. to 5 cu. yd. Cranes and Shovels
5, 20 and 30 cu. yd. Air Dump Cars

We Buy, Sell and Rent

MISSISSIPPI VALLEY EQUIPMENT CO.
513 Locust St. St. Louis 1, Mo.

Pullshovel Attach. for Lorain 75A or B.
20 ton Plymouth Loco.-Gas-Std. Ga.
50 HP Electric Hoists.
1 Yd. Round Shaft Buckets.
1 Yd. and ½ Yd. Dump Buckets.
2 Shovel Attach. for Byers Bearcat Jr.
Shovel Attach. for 41-B Bucy.-Erie.
McK-T. Pile Hammers, 3, 6 and 7.
10 ton Buf.-Spr. Roller-Gas-3 Wheel.
1 Yd. P & H Model 600, Comb. Shovel-Crane.
70 Ft. Boom for Northwest, Model 8.
80 ton American Steam Loco., Std. Gauge.
55 ton Davenport Steam Loco., Std. Gauge.

J. T. WALSH
508 Brisbane Bldg. Buffalo 3, N. Y.

CRUSHERS - ELEVATORS
SCREENS - CONVEYORS

1—7½"x13" Champion Jaw Crusher.
2—9"x15" Champion Jaw Crusher
1—10"x20" Champion Jaw Crusher.
3—12"x26" Champion Jaw Crusher
1—12"x20" Buchanan Jaw Crusher.
1—4½" Traylor Gyratory Crusher.
1—No. 2F Telsmith Gyratory Crusher.
1—S-A-9" loop Redler Elevator.

JOHNSON & HOEHLER, INC.
Lansdowne, Penna.

STEEL I-BEAMS

10"x20'-0"	26#
12"x33'-0"	WF 53#
14"x25'-0"	34#
14"x36'-6"	61#
6"x6"x28'-6"	25#

ANGLES

4x4x5/16x12'-0"
3x3x ½x13'-0"

E. COHN & SONS
Cedar Rapids, Iowa

1—20-ton WHITCOMB 36" Ga. Diesel Locomotive—rebuilt.

1—78-ton BALDWIN Type 0-6-0 Standard Ga. Side Tank Locomotive—new 1923—rebuilt.

1—80-ton BALDWIN Type 0-6-0 Standard Ga. with separate tender —rebuilt.

1—20-yd. WESTERN Air Dump Car, Vertical Cylinders, reconditioned.

1—20-ton BROWNHOIST 8 wheel Loco. Crane—1921 50' boom—DD—Excellent condition.

B. M. WEISS COMPANY
Girard Trust Company Building
Philadelphia 2, Pennsylvania

FOR SALE

1—24 x 36" Worthington Jaw Crusher
1—18 x 36" Traylor Jaw Crusher
2—14 x 26" New England Jaw Crushers
2—12 x 26" Champion Jaw Crushers
1—6" Allis-Chalmers Crusher
1—No. 40 Telsmith Reduction Crusher
1—No. 32 Telsmith Reduction Crusher
1—36" Telsmith Gyrasphere Crusher
1—16 x 16 New Holland Roll
Fifteen Ton Truck Scales
1—36" Dorr Sand Classifier
1—30" x 150' Conveyor, Link-Belt Idlers, New Belt.

BLUE BALL MACHINE WORKS
Blue Ball, Penna.

FOR QUICK SALE

20B Bucyrus Crawler Gas Crane, serial No. 4776, boom 40', cap. ¾ yd. Completely overhauled, ready for work.
Barber-Greene Model 42 Gas Disc Type Bucket Loader on pneumatic tired wheels.
Nelson Crawler Gas Spiral Feed Bucket Loader.
P&H Model 400 Crawler Gas Shovel, ¾ yd. Completely overhauled.
Northwest Model 105 Crawler Gas Crane, 1-yard.
85 HP Kewanee Horizontal Boiler, ASME, 175 lbs.

THE ACME EQUIPMENT COMPANY
14057 Schaefer Hgy. Detroit 27, Mich.

LIQUIDATION
CHALK & ROCK GRINDING PLANT

1—Chrystie 80"x45' Rotary Dryer.
1—Oliver 8'x10' Rotary Vacuum Filter.
1—Hardinge 6'x48" Conical Mill.
1—Tube Mill, 5'x15'.
2—Rotary Screens 2'x5'.
2—Dorr 15' Bowl Classifiers.
2—Dorrco 4" Diaphragm Pumps.
1—Sturtevant 36" Rock Emery Mill.
1—Sprout-Waldron 800 lb. Dry Mixer.
1—Gruendler Hammer Mill, 24" D. x 12" F.
10—Centrifugal & Rotary Pumps.
Only Partial Listing
Send for Bulletin No. L-25

STEIN EQUIPMENT COMPANY
426 Broome St. New York 13, N. Y.

FOR SALE

1—Double drum Thomas Elevator Co., electric hoist, Class L, with banked levers; size of drum 20½" dia. x 24½" long; with 150 HP motor has the the following capacities: front drum: low speed, 18,000 lbs. at 250' per minute; high speed 6000# at 750 RPM; rear drum 1 speed, 16,000 lbs. at 300' per minute. Drum shafts, 4½"; pinion shaft 4¼"; 7¼" face gears and pinions. With 200 HP G.E. type I, form M, 440 volt, 60 cycle, 3 phase, slip ring motor; speed 585 RPM, and drum controller.

1—1¾ Yd. Sauerman Dragline Bucket.

1—Reinforced 80' steel mast with all guy cables.

Necessary 1⅞" steel cable to operate equipment.

• • •

DEWEY PORTLAND CEMENT COMPANY
P. O. Box 749 Davenport, Iowa

TUNNEL CONSTRUCTION EQUIPMENT

Compressor, 868 C.F.M. Sullivan, with 150 HP Motor, belt and idler.
Compressor, 1052 C.F.M. Sullivan, with 200 HP Synchronous Motor.
Mucker, No. 75 Conway with 440 volt motor, 36" gauge.
Mucker, No. 60 Conway, 440 volt motor, 36" gauge.
Electric Locomotives, 36" gauge. Goodman, 6 Ton
Electric Locomotives, 36" gauge, Mancha, 5 Ton
Muck Cars, 3 and 5 cu. yd., 36" gauge.
Tunnel Forms, Remover, Buckets, Mixers, Hammers.

SUNDFELT EQUIPMENT COMPANY
3422 First Ave., South Seattle 4, Wash.

FOR LEASE

Gravel: I have a large deposit ranging from highway aggregate with binder to a very good grade of oversize to be crushed. No machinery present. Located in a very good commercial market. I would like to locate someone to develop this deposit under lease on a reasonable per yard basis. My services with years of experience if desired. Will also sell bank run by cubic yard. You dig any amount.

I. W. SHELBOURN
9747 S. E. Powell Portland, Ore.

24x50" Champion, 28x36" Webb City, 14x36" Cedar Rapids and Austin No. 440 24x36" Traylor Jaw Crushers.
One TY Traylor 2'4" and 2 Austin Model 105, one No.6 fine reduction and one No. 8 Superior McCully Gyratory Crushers.
Two Jeffrey 36x42" Type A Hammer Mills with Motors.
Three Allis Chalmers, 36x16" Dbl. Roll Crushers MD.
Four 4x10' Tyler Hummer Sgl. Deck Vib. Screens.
One 4x10' Kennedy Dbl. Deck Vib. Screen.
4—24"x18' Lewistown Screw Sand Washers.
Boyd "Special" 6-mold Dry Press with feeder, Model BB 4 Mold.
Barber Greene and Nelson Bucket Loaders.

• • •

Mid-Continent Equipment Company
710 Eastgate, Pa. 2290 St. Louis 5, Mo.

FOR SALE — PLANT

Naranja Rock Company, Naranja, Florida, has been completely modernized and is all diesel electric. Trap rock has just been discovered.

Price $150,000.

DIESELS

400—30/25 K. W.
Portable
A.C. Generator Sets
International UD 14's
Brand New — Spot Delivery
Radiator Cooled — Skid Mounted
60/50 Cycle — Fully Enclosed
127/220 Volt — 230/400 Volt

ROBERT SCHOONMAKER
Port Washington Long Island, N. Y.
Phone Roslyn 1220

CONCRETE PRODUCTS PLANT FOR SALE

Established in 1904. Complete in every way. Latest and best equipment for manufacturing concrete culvert pipe, block, drain tile, well curbing, etc. Ten acres of plant site; we own our own gravel tract and washing plant; good location; business well established; wonderful opportunity. Write for descriptive circular.

WETZSTEIN CONCRETE CO.
LAKE VIEW, IOWA

LIQUIDATION

(near Pittsburgh, Pa.)

1—6′ x 60′ Rotary Kiln
2—4′ x 20′ Rotary Dryers or Coolers
2—Jaw Crushers, 10″ x 20″, 9″ x 15″
1—Raymond 5 Roll Low Side Mill, motor driven, with 50 & 75 HP motors, fan, piping, and collector
1—Rotary Dryer, 6′ x 40′
1—Steel Bin, 12′ x 36′ x 12′, on steel supports 12′ high
1—16″ Troughing Belt Conveyor, 180 ft.
1—FEINC 5′ x 4′ Rotary Continuous Filter with all accessories
1—6′ American 2 Disc Rotary Filter
3—Bucket Elevators, 30′ to 45′ centers
20—Centrifugal Pumps, 2″ to 8″
30—Agitator Headers and Dorr Thickeners for 10′ to 25′ dia. tanks
800 HP of Motors, 10 to 150 HP, 3/60/440 volt, with starters
Large Quantity of Structural Steel; 50 tons of Steel Pipe, 2″ to 8″; 20 Tons of Steel Shafting, etc.

Partial list only. Bulletin on request.

SPECIAL

6—Oliver Top Feed 8′ x 6′ Continuous Dewaterers. NEW.
1—Diester-Concentrator Co. Leahy Double Surface Screen
3—Tyler and Rotex Screens
3—Rotary Kilns, 9′ x 70′, 9′ x 65′
3—Hardinge Mills, 4½′ x 16″, 4½′ x 24″, 2′ x 8″
3—No. 45 Raymond Imp. Mills

WIRE, PHONE, WRITE for full details.

BRILL *Equipment Co.*
225 W. 34th Street New York 1, New York

FOR SALE

1—120-B Electric Shovel
6—15 Ton capacity End Dump Euclid Trucks, Super-Charged Cummins Diesel Motors
4—25 cu. yd. 2-Way Side Dump Maxi Built Wagons, Hall-Scott Butane Motors
2—Athy 2-Way Side Dump Crawler Wagons, Model F-32
1—Model 8 Athy Truss Wheel Mobile-Loader
1—Page Class 4 Diesel Dragline, 65′ Boom, 1½ yd. Bucket
1—975′ Sullivan Air Compressor, direct connected to 185 HP 2200 Volt, 60 Cycle AC Motor, guaranteed condition
1—Number 29 Armstrong Electric Blast Hole Drill
2—60 KVA Generators, 3 PH, 60 CY, 220-V with DC Exciters, Switchboards and Voltage Regulators, direct connected through flexible coupling to
2—100 HP International Diesel 6-Cyl. Engines
1—Shovel Transporting Car, Standard Gauge, 141,000 # capacity.
1—Model 900 P & H Dragline, Fairbanks-Morse Diesel Engine, 100′ Boom, guaranteed condition.

STERLING EQUIPMENT COMPANY
554 Builders Exchange Minneapolis 2, Minnesota

FOR SALE

Adams 1940 Diesel Model 511 Serila 2260 Tandem drive Motor grader with U D-14 International Motor with 12′ blade, scarifier, Starter, lights, equipped with 14″ x 24″ heavy duty tires, excellent rubber and machine in good running condition. Price $3300.

1—75 H.P. Dbl. drum electric Sauerman two speed hoist, $900. Equipped with 75 H.P. A.C. Motor, $1800.

100 ft. Sauerman mast & guys, $1000.

1 Yard Sauerman bucket with trolley, $300.

2—Simplicity 3 ft. x 6 ft., two deck vibrator screens, $450.

75 ft. Elevator with 15″ x 8″ continuous type buckets, 2110 chain in perfect condition with 7½ H.P. Motor, $1000. As is where is.

One yard Haiss Power Wheel Clam Bucket in extra good condition, $300.

One Osgood Shovel front end ⅜ yd. bucket machine, 2414, $700.

One Lorain 40 Shovel front end ¾ yd. bucket, $700.

One 2300 A P & H Shovel front end ½ yd. bucket like new, $500.

1000 lb. Simplicity Pug Mill, $300.

1—26 McCully gyratory crusher fine head, extra eccentric and shaft, $2000.

10—Euclid bottom dump 8 yd. Wagons.

A. LATHAM
1281 Grace Avenue Cincinnati 8, Ohio

BUY WITH CONFIDENCE

Dependable Used Equipment

ELECTRIC WELDERS

10—Wilson Bumble Bee 300 Amp.
1—Wilson Bumble Bee 500 Amp.
10—Wilson Hornet 300 Amp.
1—General Elec. 400 Amp.
All Late Type—Rebuilt & Guaranteed

ELECTRIC HOISTS

½ Ton Yale & Towne AC
3 Ton Box, 220 Volt AC
5 Ton Shepard—550 volt DC

Electric Motors Rebuilt and Guaranteed
1½ HP to 200 HP
Immediate Shipment from Stock

INLAND EQUIPMENT COMPANY
1608 Harrison St., P. O. Box 477
Nashville 2, Tenn.

EQUIPMENT FOR SALE

1—8 ton VULCAN Standard gauge gasoline locomotive.
1—4½ ton Plymouth 24″ gauge gasoline locomotive. Model FL.
1—56 ton BALDWIN 0-6-0 steam switching type locomotive, cylinder 19″ x 24″.
1—Lot Westinghouse 9½″ locomotive air pumps, rebuilt.
1—INDUSTRIAL WORKS 17 ton steam locomotive crane, 8 wheels, 52′ boom. N. B. boiler.
4—50 ton capacity FLAT CARS, std. gauge. 40′ long, steel underframes.
20—Small 30″ gauge 4 wheeled platform cars, Timken bearings: Bed 5′ x 8′.
1—WILLIAMS ½ yard "Favorite" type clam shell bucket.
1—P. & H. model 700-B crawler type gasoline dragline, 60′ boom & fairleads.

Send us your inquiries for rebuilt equipment.

Southern Iron & Equipment Co.
Plant & General Offices.
P. O. Box 2029, Atlanta 2, Ga.

FREIGHT CARS QUICK DELIVERY

50—Dump, Western, 20 cu. yd., 40-Ton, Lift Doors
50—Gondola, 50-Ton, All Steel, Solid Bottom
15—Hopper, Twin, 50-Ton
77—Hopper, Side Discharge, 50-Ton
25—Box, 40 Ft., 50-Ton
12—Dump, Easton-Duplex, 40-Ton

• • •

Iron & Steel Products, Inc.
40 years' experience
13490 S. Brainard Ave., Chicago 33, Illinois
"ANYTHING containing IRON or STEEL"

FOR SALE

One Vulcan 4 ton gasoline Locomotive, 24″ gauge.

One Plymouth 5 ton gasoline Locomotive, 24″ gauge.

12 Heavy duty quarry cars, rocker type, roller bearing, 40 cu. ft. capacity, 24″ gauge.

3 Light quarry cars, cradle type, 40 cu. ft. capacity, 24″ gauge.

Approximately

4 tons 16 lb. rail.
4 tons 30 & 35 lb. rail.
5 frogs, 16 lb. rail.
3 switches, 16 lb. rail.
1 3-way turn out, 16 lb. rail.
3 frogs, 25 lb. rail.
3 switches, 35 lb. rail.

Price $1500 f.o.b. El Paso, Texas, for quick sale in one lot. All equipment in good operating condition.

• • •

A. COURCHESNE, Inc.
Box 200, El Paso, Texas

PIPE New & Reconditioned
ALL SIZES for ALL PURPOSES
Cut and Threaded to Your Specifications
VALVES AND FITTINGS
UNITED PIPE & SUPPLY CO., Dept. 101, NORRISTOWN, PA.

BINS: 1—200 ton, 3 compartment, Aggremeter Bin, 20 x 20 x 38' with 31,000 lb., three beam scale and 5 yd. hopper. 1—30 ton, 3 compartment, 12' x 12' x 18' high, with or without 4 x 6, 3 deck vibrator screen.

BUCKET: Page 3½ yd. Dragline Bucket.

LOCOMOTIVE CRANES: 1—20 ton and 1—45 ton, National Board boilers, double drums, air brakes. For sale or rent.

REDUCTION CRUSHERS: Traylor 4 ft., type TY, with motor, V-belt drive, etc., complete. Also, Traylor 2 ft. and 1'8" type TY.

ROLL CRUSHERS: Traylor and Allis-Chalmers Crushing Rolls, 12 x 20 and 18 x 42.

JAW CRUSHERS: 12 x 24 to 48 x 60.

SOFT STONE ELIMINATOR: Stedman Disintegrator, 42" with or without 100 H.P. motor.

HAMMER MILL: Dixie Mogul 20 x 24, V-belt drive, with breaker plate and extra hammers.

BUCKET ELEVATOR: 14" x 54' on heavy single chain, complete.

GAS HOIST: Clyde, two drum, with swinger, 50 H.P. Climax motor.

LOCOMOTIVE: 80 ton, 6 wheel, Switcher with tender, thoroughly modern, excellent condition. Sale or Rent.

VIBRATOR FEEDER: Jeffrey type FB-4, size 47" x 84", complete with M.G. set.

COMPRESSOR: 20 x 12 x 14, 250 H.P. synchronous motor, 5 step control, New 1941, used six months.

ELECTRIC SHOVEL: Bucyrus Erie 120-B, Ward Leonard control equipment, 3 phase, 60 cycle, 2300 volt.

COMPLETE SAND & GRAVEL PLANT: Including 12" electric Dredge, with cutter, bins, scale, pipe, etc. Send for complete inventory.

SCREENS: Robins Gyrex 24 x 54; 48 x 144; 4 x 12; single deck.

Robins Vibrex 48" x 120", double deck.

Simplicity 4 x 12, single deck.

Link Belt 3 x 5, single deck.

Nordberg 2 x 6; 3 x 10; 4 x 8; single deck, Flat Screens.

TRUCKS: 6—Euclid 18FD, 15 ton capacity, 10 yd. body, end dump, heavy duty, 200 H.P. Cummins supercharged, Diesel Motors; tires—front 12 x 24, 16 ply; tires—rear 14 x 24, 20 ply; built December 1942.

TRANSIT MIX TRUCKS: 12—Fords, Federals & Internationals, with 3, 3½ and 4 yd. Ransome and Jaeger, separate powered mixers; all 1942 models.

OVERHEAD ELECTRIC CRANE: 1—7½ ton Shepard, four motor, bucket operating, Crane, 36' span, 550 volt, D.C., cage control.

TUBE MILL: 1—5' x 22'.

MINE HOISTS: 1—150 H.P., drum 72 x 72". 1—450 H.P., drum 10' dia., 7' face. 1—600 H.P., 96" dia., 116" face. 1—120" dia. x 120" face with 500 H.P. motor. All 3 phase, 60 cycle, 2200 volt.

WELL DRILL: 1—Keystone 6", model 71, all steel, full crawler tread, gasoline powered.

A. J. O'NEILL
Lansdowne Theatre Building
LANSDOWNE, PA.
Phila. Phones: Madison 8300 — 8301

Jaw Crushers—4"x8" up to 18"x36".
Crushing Rolls—16"x10" up to 54"x24".
Gyratory Crushers—No. 3, No. 12.
Ring Roll Mills—No. 0, No. 1, and No. 2.
Swing Hammer Mills.
Rotary Fine Crushers—Nos. 0, 1, 1½ and 2.
Direct Heat Rotary Dryers—3½'x25', 4'x30', 5½'x40', 6'x50', 7'x50'.
Semi-Indirect heat Dryers—70"x35', 60"x30'.
Cement Kilns—3' up to 11' diameter.
Hardinge, Marcy & Fuller-Lehigh Mills.
Raymond Mills—Nos. 00, 0, 1, 4 & 5 Roll.
Tube—Rod and Ball Mills—3' to 6' diameter.
Vibrating Screens—Air Separators.
Lime hydrating plant.
New Dryers built for all purposes.

W. P. HEINEKEN
227 Fulton St., N. Y. Tel. Barclay 7-7298

THE FOLLOWING SURPLUS EQUIPMENT IS IN GOOD CONDITION AND FOR SALE:

One 9-K Gates Allis Chalmers Crusher No. 5554, Complete with Allis Chalmers TexRope Drive.
A. C. Motor 200 HP, 900 RPM, 3 Phase, 60 Cycle, 440 Volt.
11 E-330 TexRopes 1⅛" x 1" x 330" Pitch Length.
Necessary Starting Equipment.

One 11 Groove Sheave 21.6" Dia. Motor Sheave

One 11 Groove Sheave 52" Dia. Face 19¾"

Special Crusher Parts
One Bottom Shell Bushing
One Spider Cap
One Main Shaft (pre war nickle steel)
One Counter Shaft (with 52" Dia. 11 Groove Sheave)
One Counter Shaft Bearing Cap
One Eccentric (with mantle for rebabbiting)
One Spider Bushing
One Bevel Pinion
One Bevel Wheel

Two 10" Newhouse (Allis Chalmers) Crushers, Serial Nos. 8477 and No. 8520, Complete with 150 H.P. 3 Phase, 60 Cycle, 220 Volt, 575 RPM Allis Chalmers Motors.
Necessary Starting Equipment.

Spare Parts for 10" Newhouse
Two Main Shaft Nuts
Two Bottom Shell Bushings
Two New Eccentrics

Three 7" Newhouse (Allis Chalmers) Crushers, Serial Nos. 8524, 8480 and 8687, Complete with Two 100 H.P. 3 Phase, 60 Cycle, 220 Volts, Allis Chalmers Motors.
Necessary Starting Equipment.
One with 60 H.P. 3 Phase, 60 Cycle, 220 Volts Allis Chalmers Motors.

Three New Eccentrics
One Main Shaft Nut
Four Support Springs and Castings
Three Bottom Shell Bushings
One Suspension Nut

BIG ROCK STONE & MATERIAL COMPANY
Ft. of Ashley St., Little Rock, Ark.

SALE OR RENT

CRANES & SHOVELS
Browning 7 ton, 10 wheel Truck Crane, 40' boom.

LOCOMOTIVE CRANES
2—Industrial type K 40 ton Oil fired. New 1943.
Industrial 25 Tons—65' Boom—Single Drum—Oil Fired Code Boiler. Cheap.

"SPECIAL"
2—Link Belt — 5 yard — 19' ga — 100' boom—full revolving steam cranes. Like new. Cheap.
Suitable for Mounting on Barge

LOCOMOTIVES
American—50 ton—16" x 24" Saddle Tank 0-6-0. S & A Air Brakes—Code Boiler—Ser. 67356 new 1927—excellent.

2—Whitcomb 15 Ton Diesel 36" or Std. Ga.—New 1942
2—Plymouth 18 Ton Std. Ga. Gasoline. New 1942.

MISCELLANEOUS
1—Chi. Pneu 15 x 9 x 10—664 Diesel Compressor.
1—Link-Belt K44—1½-Yard Backhoe Attachment.
23—CP25 Drifters. Reconditioned. $35.00 each. Will ship on approval.

WANTED
Will pay cash for any modern const. equipment.

Write R. H. BOYER, *Mgr. Equip. Division*

CHARLES DREIFUS COMPANY
12 S. 12th, Phila. 7, Pa.
Write, Wire or Phone Phone Bell-Walnut 5050

FOR SALE
SHASTA DAM SAND AND GRAVEL PLANT EQUIPMENT
Including—GOODYEAR 9-MILE-HAUL 36" SPECIAL CONVEYOR BELTING, 32,000' of Belt remaining, with Idlers, Pulleys, and drives.
ALSO—
Electric Motors, Line Equipment, Transformers, and Supplies; Pendulum Boom Belt Conveyors, 100' and 200'; Merrick Feedoweights and Weightometers; Dorr Hydroseparator, 20'x4'; Marcy Rod Mill, 5'x12'; Vibrating Screens; Dorr Rake and Bowl Classifiers; Extra-heavy Gravel Washer, Trommel type; Pumps: Centrifugal, Deep-well, Steam, Dredge.
Auxiliary Equipment: Chain Hoists, Winches, Welding Machines, etc.
Subject to Prior Sale
Write, Wire, Telephone Redding 1440
COLUMBIA CONSTRUCTION COMPANY, INC.
Box 579 Redding, California

USED CRUSHING EQUIPMENT

1—Gilson "22" Pulverizer, used 75 hours.
1—Gilson "15" Pulverizer Plant w/power, etc.
1—Pulverizing Plant, mounted on truck, solid tires, w/Gruendler "2XB" Allis-Chalmers E-60 power, belt feeder, discharge conveyor—$2250.00.
1—Portable Conveyor, 24" x 50' w/LeRoi 8 HP, new belt.
1—Cedarapids Portable Crushing Plant, 1024 RB jaw, 18 x 18 rolls, vibrating screen, hopper, conveyor, power, 3 axle, pneumatics.
1—Cedarapids Portable Crushing Plant, 1036 jaw, rolls, etc.
1—Cedarapids Portable Crushing Plant, 824 jaw, hopper, conveyor, etc.
1—Universal 30' Bucket elevator line.
1—Bin, 21-yd. jack-leg. NEW.
1—Bin, 21-yd. jack-leg. Used.

SHOVELS & CRANES

1—Osgood 1¼ yd. shovel, w/crane boom.
1—P&H "206" ¾ yd. dragline, $2,000.00.
1—Universal ½ yd. truck crane. Cheap.
1—½ yd. truck crane 3 axle truck.
1—Koehring "301" ¾ yd. dragline.
1—Williams "19M" ¾ yd. clam bucket. NEW.
1—Williams "12M" ½ yd. clam bucket. NEW.

POWER UNITS

1—Minneapolis-Moline 49 HP Power Unit. New.
1—Minneapolis-Moline 38 HP Power Unit. New.
1—Minneapolis-Moline 26 HP Power Unit. New.
1—Minneapolis-Moline 250 HP Used Power Unit.
1—LeRoi 12 HP 4 cylinder Power Unit. Reconditioned.
1—Waukesha-Hesselman 46 HP new engine.
20—Briggs & Stratton 6 HP gas engines. New.

AIR EQUIPMENT

1—Sullivan 210' Compressor.
1—Schramm "105" Compressor.
1—Sullivan Wagon Drill.
1—Cleveland "DR-30" NEW Wagon Drill.
2—Davey "105D" New Compressors.
3—Wayne 7 cu. ft. new shop compressors.
2—Wayne 2.2 cu. ft. new shop compressors.

MISCELLANEOUS

1—Highway Cinder Spreader. NEW.
1—Rex "40M" 4" Pump. NEW.
2—Rex "20M" 3" Pumps. NEW.
2—Rex "10M" 2" Pumps. NEW.
6—Rex "3M" 1½" Pumps. NEW.

EIGHMY EQUIPMENT CO.
526 W. State St., ROCKFORD, ILL.

FOR SALE
Diesel Engine

1—14x17 four cylinder Fairbanks-Morse Diesel Engine with 170 KW 2300 Volts 60 Cycle 3 phase generator. Price $2600.

Naranja Rock Company
Naranja, Florida

BONDED SCALES
VIBRATING SCREENS,
CRUSHERS

15 ton, 22'x9' Truck Scale	$440.00
20 ton, 34'x10' Truck Scale	815.00
3'x6'—1-deck Vibrating Screen	495.00
3'x8'—2-deck Vibrating Screen	685.00
3'x8'—3-deck Vibrating Screen	885.00
Cinder Crusher	345.00
Coal Conveyor	745.00

BONDED SCALE COMPANY
110 Bellview, Columbus 7, Ohio
Visit our factory. Inspect several models in operation. Immediate delivery.

BELT CONVEYORS AND ACCESSORIES

12—20" belt conveyors, 10'-289', Falk Herringbone gear reducer and enclosed ball bearing motors.
4 magnetic separators, 20" belt, Falk Reducer, enclosed ball bearing motors.
Belt conveyors, 36"x225', anti friction.
Belt conveyor, 30"x150', plain idlers.
Slat conveyor, 20"x60' on roller chain.
Scraper conveyor, 42' long, 16" steel trough.
1800' of 48" prewar 8 ply conveyor belt.
Belt trippers for 14, 16, 18, 20, 24" belt.
2000' gravity roller conveyors, 6" to 20" wide.
Merrick Weightometers for 20" and 30" belt.

BUCKET ELEVATORS

4—54' steel enclosed, 10" buckets, 5 HP motor-reducer.
31' steel enclosed elevator, 10" buckets, Falk reducer.
2—68' steel enclosed 12" buckets, 10 HP Falk Reducer and enclosed motor.
14" continuous bucket elevator, 50'.
12" centrifugal bucket elevator, 50'.
10", 8", 6" bucket elevators 25' to 50'.
300 type C 10"x6"x6" galvanized buckets.

MISCELLANEOUS

Clamshell Rehandling buckets, 1, 1½, 2 yards capacity.
Magnetic pulleys, 12" to 30" dia., 18" to 30" face.
Chicago Air compressors, belted, 529 and 107 CFM.
Electric hoists, single and double drums.
Gasoline locomotives, 36" gauge, 4 and 8 tons.
Generators, 15 cycles, for Hummer screens.
Side and end dump cars, 36" and 24" gauge.
20 Falk Speed reducers with motors, 1½ to 25 HP.
Pumps, carpullers, engines, motors, V pulleys.

CRUSHERS, ROLLS, MILLS

Traylor jaw crusher, type H, 10"x16".
Scholl jaw crusher, 9"x15".
Acme type D jaw crusher, 12"x22".
New England jaw crusher, 11"x21".
A-C gyratory reduction crusher, 3D.
Traylor "BULLDOG" 11" gyratory crusher.
Single and double roll 24" dia. crushers.
A-C double roll crusher, 16"x42" type B.
Stedmans type B Rolling Ring crusher, 20"x16".

VIBRATING & REVOLVING SCREENS

2 enclosed Simplicity 3'x6' vibrating.
Simplicity three deck 3'x6' vibr.
Allis Chalmers two deck 3'x8' vibr.
Allis Chalmers two deck 4'x10' vibr.
Robins Gyrex two deck 4'x10' vibr.
Leahy single deck 4'x9' double vibrator.
Perfex single deck 4'x7'6" shaker screen.
Hummer single deck, 3'x5', 4'x5' and 4'x7'.
Revolving screens: 4'x22' and 5'x18'.
S-A Conical Screens, 28 and 44" dia. 54" long.

G. A. UNVERZAGT & SONS
136 Coit St., Irvington, N. J.

LOCOMOTIVES

1—80 ton Baldwin 0-6-0 separate tender switcher, built 1925, A.S.M.E. boiler, piston valves, Walschaertes valve gear, overhauled and up to date on all I.C.C. requirements.

1—79 ton American 0-6-0 separate tender switcher, built 1920, superheated boiler, piston valves, Walschaerts valve gear, rebuilt and brought up to date on all I.C.C. requirements.

1—26 ton American 0-4-0 saddle tank, standard gauge, A.S.M.E. boiler, entire new firebox, completely overhauled, coal burner.

1—20 ton Whitcomb diesel-mechanical 36" gauge locomotive, four wheel type. This locomotive built in 1936 and has had only light service. It is completely rebuilt with new wheels, chains, sprockets, reversing gear, and improved type bronze clutch plates. Caterpillar V-8 engine, 4 speeds each way, link-and-pin couplers.

1—Westinghouse 10½" locomotive type cross-compound air compressor, rebuilt, suitable for either locomotive or stationary installation.

• • •

BIRMINGHAM RAIL & LOCOMOTIVE CO.
BIRMINGHAM 1, ALABAMA

FOR IMMEDIATE DELIVERY OF RUBBER PRODUCTS

Conveyor Belting...Transmission Belting...Elevator Belting...Fire, Water, Air, Steam, Suction or Welding Hose, etc.

CALL, WIRE or WRITE
CARLYLE
THE RUBBER HEADQUARTERS

CARLYLE RUBBER PRODUCTS ARE NEW, GUARANTEED & LOW PRICED

CONVEYOR BELTING

ABRASIVE RESISTANT COVERS

Width	Ply	Top-Bottom	Covers	Width	Ply	Top-Bottom	Covers
48"	8	1/8"	1/16"	20"	5	1/8"	1/32"
42"	5	1/8"	1/16"	20"	4	1/8"	1/32"
36"	6	1/8"	1/16"	18"	4	1/8"	1/32"
30"	6	1/8"	1/16"	16"	4	1/8"	1/32"
30"	5	1/8"	1/16"	14"	4	1/16"	1/32"
24"	5	1/8"	1/32"	12"	4	1/16"	1/32"
24"	4	1/8"	1/32"				

Inquire For Prices - Mention Size and Lengths

TRANSMISSION BELTING

HEAVY-DUTY FRICTION SURFACE

Width	Ply	Width	Ply	Width	Ply
18"	6	10"	6	6"	5
16"	6	10"	5	5"	5
14"	6	8"	6	4"	5
12"	6	8"	5	4"	4
12"	5	6"	6	3"	4

Inquire For Prices - Mention Size and Lengths

ENDLESS "V" BELTS

"A" WIDTH All Sizes | "D" WIDTH All Sizes
"B" WIDTH All Sizes | "E" WIDTH All Sizes
"C" WIDTH All Sizes | Sold in Matched Sets

Inquire For Prices - Mention Size and Lengths

PROTECT THAT PLANT
FIRE HOSE

APPROVED SPECIFICATION HOSE
EACH LENGTH WITH COUPLINGS ATTACHED

Size	Length	Per Length
2½"	50 feet	$28.00
	25 "	16.00
2"	50 "	23.00
	25 "	13.00
1½"	50 "	20.00
	25 "	11.00

Specify Thread On Couplings

SPECIAL OFFER . . . HEAVY DUTY
RUBBER HOSE

WATER HOSE
Each Length with Couplings Attached

I.D. Size	Length	per Length
¾"	25 feet	$4.25
1"	50 "	8.00
	25 "	6.25
1¼"	50 "	12.00
	25 "	7.50
	35 "	10.50
	40 "	12.00
1½"	50 "	15.00
	25 "	10.00
	35 "	14.00
	50 "	20.00

AIR HOSE

I.D. Size	Length	per Length	Couplings
½"	25 feet	$5.00	$1.50 Pair
	50 "	10.00	1.50 "
¾"	25 "	6.25	2.50 "
	50 "	12.50	2.50 "
1"	25 "	10.00	3.50 "
	50 "	20.00	3.50 "

LARGER SIZES ALSO AVAILABLE
All Prices—Net—F.O.B. New York

CARLYLE RUBBER CO., INC.

62-66 PARK PLACE — NEW YORK, N. Y.

DEPENDABLE USED MACHINES

Special — Osgood Model 605, 1 yd. dragline, new in 1941*

2 yd. Koppel cars, 36"
20x24 portable conveyor
Byers Model 83 crane*
40x32 roll crusher
15x36 roller bearing crusher
10x20 portable crusher
Northwest No. 3 dragline
Pioneer Duplex gravel plant*
Day No. 5 hammermill
Vulcan 4 ton locomotive
Jaeger 4x6 pump
Robins 3½x6 screen
Northwest No. 3 shovel
Speeder ½ yd. shovel
Sauerman 2 yd. slackline

Note: Items followed by asterisk (*) are for rent ony.

TRACTOR & EQUIPMENT CO.
3506 W. 51st Street — Chicago 32

OFFICE PHONES: MULBERRY 8775 & 8776; L D 266

RENTAL EQUIPMENT COMPANY

We Rent Construction Equipment of All Kinds

Write, wire or phone regardless of location of work.

5515 Bulwer Ave. — ST. LOUIS 7, MO.

Write, wire or phone regardless of large or small requirements.

ELECTRICAL MACHINERY

Motors and Generators, A.C. and D.C. for sale at attractive prices. New and Rebuilt. All fully Guaranteed. Send us your inquiries.

V. M. NUSSBAUM & CO., Fort Wayne, Ind.

FOR SALE

High Calcium Limestone Deposit and Lime Plant in Eastern U. S. A. Location favorable to the Agricultural, Building, Chemical and Steel trades.

Box 1203, c/o Pit & Quarry Publications
538 So. Clark Street Chicago 5, Illinois

FOR SALE BY OWNER

29 Allis-Chalmers Gates Style "K" gyratory crusher. Ready to go and very reasonable.
¾ yard Osgood Steam shovel—or will sell parts for repairs.
1 yard manganese rock digging bucket.
3 yard friction Hoist—will lift cars loaded with four yards of rock.

Box No. 1211, c/o Pit & Quarry Publications
538 So. Clark Street Chicago 5, Illinois

TRUCKS FOR SALE

Two—C55F 1936 International, 10 wheels
Two—TM Special 1935 Brockway, 6 wheels
One—BM 1940 Mack, 6 wheels
All trucks in good running condition.

HOWAT CONCRETE COMPANY, INC.
2 S. Street, S. W. Washington, D. C.

WELDERS

200 & 300 AMP. Gasoline & Electric Driven, latest type, skid or wheel mtd. Also 1000 AMP. Multi-Operator Diesel Dr. Portable Welder. Immediately Available. Sacrifice Prices.

CONSTRUCTION & POWER MACHINERY, INC.
270—23d St. Brooklyn, New York

RAILS NEW AND RELAYING

MOST ALL SECTIONS IN STOCK also spikes, bolts, frogs, and switches available.
Always in the Market to buy surplus material. Send us your inventories.

M. K. FRANK
480 Lexington Ave. Park Building
New York City Pittsburgh, Penna.
Blitz Bldg., Reno, Nevada Havana, Cuba

IN STOCK

1 Elwell-Parker Gas Electric Lift-truck—3-ton capacity
1 Elwell-Parker Gas Electric Lift-Truck—2-ton capacity
1 Clark Gas Lift-Truck—5-ton capacity
2 Baker Electric Lift-Truck—2-ton capacity
2 Electric Battery Chargers for industrial trucks.

INDUSTRIAL TRADING COMPANY
1225-31 W. Monroe St. Chicago 7, Ill.

TANK FOR SALE

100 tons capacity supported by four steel columns with discharge gate 9 feet from grade level. Includes skip hoist in enclosed tower. Can be easily converted to continuous elevator. Heavily built and in excellent condition.

G. & W. H. CORSON, INC.
Plymouth Meeting, Pa.

FOR SALE

2—12 foot Eagle washers
1—1 yard Williams clamshell bucket
1—5 x 4 Dayton-Doud pump direct connected to 50 HP motor
1—Pioneer belt feeder

KEEFNER SAND & GRAVEL CO.
P. O. Box 131 Des Moines 1, Iowa

FOR SALE

Locomotive: American, Steam, 16" x 24" Cylinder 6 wheel Saddle Tank. Built new 1927 National Board 180# Boiler.

E. E. FORT
1119 So. 56th St. Philadelphia 43, Pa.

CRUSHERS WANTED

#15 GYRATORY CRUSHER
5 FT. SYMONS CRUSHER
20# USED RAIL, 50 TON

EQUIPMENT SALES & ENGINEERING CO.
33 N. La Salle St. Chicago, Ill.

SAVE MONEY ON WIRE ROPE

Buy slightly used but fully reconditioned and examined wire rope for your requirements. All sizes, lengths, and constructions—Write for price list.

A. SAMUELSON
508 W. 53rd St., New York City, N. Y.

FOR SALE

8500 ft. ¾" new 6 x 19 black plow steel wire rope.
50—18" new 4 sheave extra heavy wire rope steel tackle blocks.
15—18" new 4 sheave extra heavy wire rope steel tackle blocks with 1600 lb. weights.

H. J. BRANNIGAN, INC.
29 Broadway New York 6, New York

FOR SALE

3—2.9 yd. Blaw Kox truck mixers complete with water tanks at $750.00 each.
1—Erie Type B Steam Shovel, $2500.00.
1—Double drum, all electric THOMAS HOIST.
1—SAUERMAN dragline bucket, capacity 1 yard.

COLONIAL SUPPLY COMPANY
Thirteenth and Wilson Streets
P. O. Box 1798
Louisville, Kentucky

ENGINES

Diesel Gasoline
Prompt shipment from stock

JOHN REINER & COMPANY
12-12 37th Ave., Long Island City, N. Y.

FOR SALE

2—315 cu. ft. 100# pres. Ingersoll Rand, model 315 and 315A portable Air Compressors with 105 HP Waukesha Oil Engines complete with accessories.

DUQUESNE ELECTRIC & MFG. CO.
Cor. Broad St. & Hamilton Ave., Pittsburgh 6, Pa.

FOR SALE

1—12 cu. yd. Austin Western Hydraulic Scraper

1—10 ton 3-wheel Roller

REITH-RILEY CONSTRUCTION CO.
Goshen, Indiana

FOR SALE

1—75'x140' Steel Building—Ex. cond.
1—75 & 50 KVA Generators D/C Engines
2—250 HP, 150# P. H. R. T. Boilers
2—220 HP, 150# P. Locomotive Type Boilers
1—10", 12" or 14"x36" Jaw Crusher
1—150' & 82½ KVA Gens. D/C Full Diesels
New Electronic Feeder Control for Hammer Mills and Pulverizing Machines—Write us.

H. & P. MACHINERY COMPANY
6719 Etzel Avenue St. Louis 14, Missouri

SAND & GRAVEL PIT FOR SALE

Menantico Sand & Gravel Co., producing construction and industrial sand and gravel; fully equipped; rail facilities; 294 acres of land; inventory and details on request.

MENANTICO SAND & GRAVEL COMPANY
J. Peter Davidow, Receiver
101 N. High St. Millville, N. J.

FOR SALE

One (1) Marion 450 Gas, Electric Shovel and Crane with 1¼ Yard Dipper and 1 Yard Clam Shell. 40 foot Boom. Extra New Motor. Good Condition. Price.....$9,500.00
One (1) 40'x3'—1"x1'—3" Steel Elevator. Enclosed Steel Chain and Buckets. 30 tons per hour capacity. Columbus Conveyor. Price $600.00

BLUE ROCK, INCORPORATED
P. O. Box 110, Washington C. H., Ohio
Phone 210, Greenfield, Ohio

GOOD USED EQUIPMENT

Fairbanks 150 ton RR Track Scale
9' Clearfield Wet Pan
National 10-ton Single Drum Winch, arranged for direct motor drive
86" Sturtevant Exhaust Fan

IRA C. JORDAN
2508 E. Belleview Place Milwaukee 11, Wisc.

FOR SALE

BROOKS LOAD LUGGER, late model CH-200. 2 cu. yd. buckets, A-1. $600.
UNIVERSAL, full revolving Crane, 30 ft. boom, 6 cyl. Waukesha engine, Good. $3250.
HUG, Rear Dump Truck, 12 cu. yd. Heil Boulder type Body, 150 HLP. Cummins Diesel. 10 tires 12.00x20. A-1. New 1941. Orig. cost $13,700. Price $5500.
LE ROI Portable 2-stage 315 cu. ft. Compressor. Overhauled. $1750.

M. WENZEL
2136 Jefferson Kansas City, Missouri

FOR SALE

Eagle 20-foot Log Washer, new unit used, one month. Serial No. 74.

KASER CONSTRUCTION CO.
ADEL, IOWA

FOR SALE

LOADER for handling coal, cinders, sand, etc. Caterpillar Tractor Model D4 with Athey High Lift mounting. In excellent condition. Can be inspected at our yard.

THE CHAS. M. INGERSOLL CO.
19930 Detroit Rd. Rocky River 16, Ohio

FOR SALE

2—LeTourneau, Model C-1 Tournapulls, powered with "Caterpillar" D468 Engine, LeTourneau Model LS Scraper. Units A-1, ready to go.
1—Koehring, WHD 125 Wheeler, s/n 1406, powered with GMC Model 4-71 Diesel Engine, Scraper, 13.5 cu. yd. capacity. Unit A-1, ready to go.
1—New Cedar Rapids 25x40 Crusher with new "Caterpillar" D13000 engine.

JOHN FABICK TRACTOR COMPANY
3100 Gravois St. Louis, Missouri

RAILS NEW AND RELAYING

TRACK ACCESSORIES
from 5 Warehouses

L. B. FOSTER COMPANY
PITTSBURGH • CHICAGO • NEW YORK

26 & 60 IN. CONVEYOR BELTS

6600 Ft. New 26 In. 5 Ply.
2200 Ft. Like New 60 In. 10 Ply.
IMMEDIATE SHIPMENT

R. C. STANHOPE, INC.
60 East 42nd St. New York 17, N. Y.

FOR SALE

7—Dempster Dumpsters. 4 on Studebaker chassis model 20; 3 on White chassis model 805A. All cab over engine type.

GEROSA HAULAGE & WAREHOUSE CORP.
777 E. 138th St., N. Y., N. Y.

FOR SALE

1—No. 25 Kennedy Van-Saun Crusher
1—18 x 32 Acme Crusher
Available December 1st.

Catskill Mountain Stone Corp.
Cairo, N. Y.

FOR SALE

(1) 25 Ton Browning Steam Locomotive Crane with 8 wheels, 42 ft. boom, bucket drums. Reconditioned in 1943. Hartford Inspection in 1945. Very good Buy.

HAWKINS AND COMPANY
122 So. Michigan Ave. Chicago 3, Illinois

NEW CRUSHING & PULVERIZING EQUIPMENT

Popular Sizes for Early Delivery
(Subject to Prior Sale!)

24 x 36 Jaw Crusher
20 x 36 " "
15 x 36 " "
15 x 24 " "
10 x 24 " "
10 x 16 " "
40 x 24 Double Roll
24 x 18 " "

All of the above units are of the latest type—all roller bearing equipped.

The following hammer mills suitable for agricultural limestone or limestone aggregate, are available:

(6 x B)—50 to 100 tons per hour
(4 x C)—35 to 75 tons per hour
(3 x B)—15 to 30 tons per hour
(2 x B)— 8 to 12 tons per hour
(No. 1 HER)—4 to 6 tons per hour

All of the above Gruendler Hammer Mills are of the latest type, equipped with heavy roller bearings—designed for maximum production.

The following size heavy duty **Apron Feeders** with Manganese Flights—

24" by 6 ft.
36" by 8 ft.

Many other sizes and capacities are constantly being added to this list.

Contact your nearest Gruendler representative or the St. Louis Office direct for your requirements.

GRUENDLER
CRUSHER and PULVERIZER CO.
2921 N. MARKET ST. ST. LOUIS 6, MO.

CRUSHER PLANT
Farrel 60" x 48" jaw crusher and feeder; No. 17 and No. 38 Kennedy Gyratory; other items. Sold as complete plant only.

JAW CRUSHERS
Traylor 24" x 36"
Cedar Rapids 36" x 14"
Reliance 10x30 with some extra spare parts
Pioneer 15" x 36" overhead eccentric
Farrel 18" x 36"
Cedar Rapids Kubit Breaker No. 3-6
Stedman Fdry. & Mach. Co. Type B 20" x 16"
Acme Model 16D 16" x 32"

GYRATORY
Allis-Chalmers 42", excellent condition
Allis-Chalmers Superior McCully 8"
Allis-Chalmers Superior McCully 6"
Traylor Model TY 9" feed
Kennedy Van Saun Model 258
Traylor Model 410 TZ

ROLL AND HAMMER CRUSHERS
Allis-Chalmers double roll crusher 54" x 20"
Good Roads roller bearing crusher 15" x 30"
McLanhan & Stone double roll fine crusher 18" x 24"
Jeffry 30" x 24" Type A Pulverizer
Jeffry 18" x 24" Hammermill

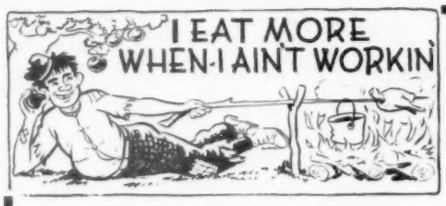
SHOVELS—CRANES
Bucyrus-Erie 50B steam high lift shovel
Bucyrus-Erie 42B steam shovel 1½ yd.
Bucyrus-Erie 43B Diesel 1¾ yd. shovel
Osgood 1¾ yd. gas shovel
Lima gas operated 1½ yd. shovel
Speeder Model 4D Diesel ⅝ yd. shovel and crane
Marion 450 steam shovel 1¾ yds. cap.
Marion 450 gas-elec. shovel 1¼ yds. cap.
P&H Model 600 crane and shovel
Buc.-Erie 20B Air tunnel shovel ⅞ yds.
P & H 650 shovel-crane

LOCOMOTIVES—CARS
American 45 ton, Saddle Tank
Vulcan 25 ton side saddle tank, steam, std. gauge
Plymouth 30 ton standard gauge Saddle Tank
Vulcan 30 ton Steam, Saddle Tank
Porter 13 ton, Steam Saddle Tank, 36" gauge
Baldwin Westinghouse 8 ton, 36" ga. Battery
Vulcan 6 ton, 36" gauge, gas.
3—Western Steel 20 yard Air Dump Cars

TRACTORS—BULLDOZERS
Allis-Chalmers HD7 with trailbuilder.
Allis-Chalmers Model WM with angledozer
Allis-Chalmers Model HD 7 with hydraulic trailbuilder
Int. Model 1-20 with Hough ½ yd. Loader

MISCELLANEOUS
25 Steel Stone Skips 2-3 yds.
I-R Lyner Model 50 drill sharpener
Rotary Screen 4' x 18' with 40 ft. bucket elevator
Howe 100 ton track scale 36" gauge.
Robbins 4' x 6' double deck vibrating screen.
Kennedy-Van Saun 4 deck Type A 4' x 6' screen.

RICHARD P. WALSH COMPANY
30 Church St. New York, N. Y.



DERRICK

1—62½ ton Insley Stiffleg derrick, 50' mast, 74' boom.- Cap. 62½ tons @ 40' radius.

AIR COMPRESSORS
Portable and stationary, belt with elec. or gas power, sizes from 20 cu. ft. 1,000 cu. ft.

CRUSHERS
1—Acme Model No. 9 jaw crusher, with screen, elevator and gas engine. 12 to 18 tons per hr. cap.
1—Good Roads crushing plant, crusher, 10x20".
1—No. 2 Climax jaw crusher, size 9x16".
1—Buchanan jaw crusher, size 10x16".
1—Acme jaw crusher, Ser. No. 1873, size 12x20".
1—No. 3 Champion jaw crusher, size 7½x13".
1—United Iron Works, "Blake-type" jaw crusher, size 9½x24".
1—Sawyer Massey jaw crusher, size 9x18".

DERRICKS
4—Steel guy derricks. 1—20 ton Insley 115' mast, 100' boom. 2—20 ton American steel guy derricks. 1—110' mast, 110' boom; 1—100' mast, 90' boom. 1—15 ton American steel derrick, 83' mast, 75' boom. 1—5 ton Terry Guy Derricks, 70' mast, 60' boom.
2—Stiff leg derricks.
1—15 ton Clyde, 30' mast, 45' boom. 1—11 ton Fort Pitt, 38' mast, 70' boom. Also a number of wood stiff leg derricks, 1 to 5 ton cap.

HOISTS (Electric, Gas, Steam
85—Electric, ranging from 30 H.P. up to 125 H.P. consisting of triple-drum, double-drum and single drum, with AC or DC motors, some with attached swingers. Following makes: American, Clyde, Lambert, Lidgerwood and National.

Idle equipment eats up storage, maintenance cost and investment dollars. For temporary use RENT equipment from E.C.A.

Gas moists ranging from 8 to 120 H.P., single, double and triple-drum; all standard makes (38 in stock).
Steam, ranging from 8 H.P. to 60 H.P., single, double and triple-drum; all standard makes.

PNEUMATIC TOOLS
Column Drifters and Tripods
4—Model 17 Denver rock drills.
3—Sullivan high-speed drills, Model FG-3.
5—Ingersoll Rand type X71 drifters.
4—Gardner Denver drills with drifter mountings.

JACKHAMMERS
8—Jackhammers, consisting of Hardsoco, Worthington and Cleveland. 45 lb. and 85 lb. class.
4—Ingersoll Rand Model BCR-430 jackhammers, 47½ lb.
1—No. 3 Hardsoco 50 lb.

WAGON DRILLS
2—Gardner Denver derrick drills with Model 21 Gardner Denver drill; will drill 30 ft.
1—Ingersoll Rand drill, size D, with utility air hoist and Ingersoll Rand X71 drill.
1—Ingersoll Rand Model FM-2 drill, with Ingersoll Rand air hoist, size X71 drill, mounted on pneumatic tires; will handle 20 ft. steels.
2—Ingersoll Rand, Model FM-2, with air hoist and IX71 drill, mounted on 3 steel wheels; will handle 20 ft. steels.
1—Ingersoll Rand drill No. 3122, with X71 drill, mounted on 4-wheel trucks; will drill up to 36 ft. deep holes.

WE ALSO HAVE A LARGE STOCK OF DRILL STEEL WITH MISCELLANEOUS TIMKEN BITS.

PUMPS
We have a large stock of centrifugal pumps, gas and elect. powered from 1½" to 10". Also Dredging and vertical pumps.

PARTIAL LIST ONLY — SEND FOR 48 PAGE STOCK LIST

All this equipment is owned by us and may be inspected at one of our plants. WE BUY — REBUILD, SELL AND RENT.

CHICAGO 12, ILL.
1160 S. Washtenaw Ave.

PHILADELPHIA 2, PA.
1513 Race St.

PITTSBURGH 30, PA.
P. O. Box 933
Dept. PQ

NEW YORK 7, N. Y.
30 Church St.
Dept. PQ

EQUIPMENT CORPORATION of AMERICA

FOR SALE

1—¾ Koehring Combination Crane, Dragline & Shovel

REITH-RILEY CONSTRUCTION CO.

Goshen, Indiana

FOR SALE

MOTOR 75 HP 900 RPM GE Slip Ring 440/3/60
VIBRATING SCREEN, Kennedy-VanSaun Type A, four deck 4' x 8'
HYDRATOR, Clyde No. 3, 10 foot
GRINDING MILL, Fuller-Lehigh Air Swept, 33' with blowers, cyclone collector and piping
TRACK SCALE with Streeter-Amet weight recorder, 12,000 lbs. capacity
HAMMERMILL PULVERIZER, K-B size 1, 12" x 24"

G. & W. H. CORSON, INC.
Plymouth Meeting, Pa.

FOR SALE

7½ Ton Capy. Truck Crane
40 KW Generator Diesel Power A.C.
½ Yd. Owen Digging Bucket
Locomotives and Locomotive Cranes
5 Yd. Le Tourneau Scraper
1½ Yd. Browning Crawler Crane Diesel Power
P & H Model 500

"STONE — the CRANE MAN"
2457 Woodward Ave. Detroit 1, Mich.

FOR SALE

One Century motor Form AS 40 RPM 1730 3 phase 60 cycle 2200 volts No. 831612 Type AS 60 HP with compensator. $575.00.
One GE Series No. 14205 Type KT No. 322-8-20-1200 Form B 3 phase 60 cycle 20 HP Amps 5 RPM 1155 volts 2200 compensator $375.00.
Two 50 HP GE motors direct connected to 10" water pumps Frankie Flexible couplers on bases 75 foot head. $1100.00 for both with compensators.

D. K. ELLINGWOOD
1801 Twinridge Blvd. Omaha, Nebraska

Locomotives

1—Westinghouse, 2-Unit, 87-Ton 600 HP, Diesel Electric Locomotive. Built 1928. T/E 52200#. Can be operated as one or two Units.
2—44-Ton Westinghouse Electric 600 V. D. C. Excellent condition. Just overhauled.
OTHER LOCOMOTIVES, TOO!

Iron & Steel Products, Inc.
40 years' experience
13490 S. Brainard Ave., Chicago 33, Illinois
"ANYTHING containing IRON or STEEL"

FOR SALE OR RENTAL AGAINST PURCHASE

3—Bucyrus Model 14 Comb. Crane/Dragline Machines, 3-Yd., crawler mtd., 76' booms, elec., 3/60/440. Can convert to Diesel.

CONSTRUCTION & POWER MACHINERY, INC.
270—23d Street Brooklyn, N. Y.
Tel. South 8-4900

GENERATING SETS

Diesel Gasoline

Prompt shipment from stock

JOHN REINER & CO.
12-12 37th Ave., Long Island City, N. Y.

The OWEN BUCKET CO.
6050 Breakwater Avenue, Cleveland, Ohio
BRANCHES: NEW YORK PHILADELPHIA CHICAGO BERKELEY, CAL.

Index to Advertisers

Ace Co., The 126
Acme Road Machinery Co. 134
*Allis-Chalmers Tractor Division. 42
*American-Cable Div. American Chain & Cable Co., Inc. ..... Inside Back Cover
*American Chain & Cable Co., Inc. ..... Inside Back Cover
American Conveyor Co. 99
American Manganese Steel Co. .. 83
*American Pulverizer Co. 90
Anchor Concrete Machinery Co. . 119
Armstrong-Bray & Co. 132
Atlas Powder Co. 27

*Babcock & Wilcox Co. 24
*Barber-Greene Co. 22
Barrett Cravens Co. 122
Baughman Mfg. Co., Inc. 100
Bay City Shovels, Inc. 21
*Bemis Bro. Bag Co. 16
Berg Vault Co. 126
Big Rock Stone & Material Co. 140
Birmingham Rail & Locomotive Co. 141
*Blaw-Knox Division of Blaw-Knox Co. 104
*Brill Equipment Co. 139
Bristol Company 94
Broadcast Section 133-143
*Brooks Equipment & Mfg. Co. . 132
Buda Company 23
*Buell Engineering Co., Inc. 48
Burnham, Royal E. 133

Carlyle Rubber Co., Inc. 141
Carver Pump Co. 81
Chicago Electric Co. 134
Chicago Perforating Co. 98
*Chicago Pneumatic Tool Co. 131
Christie Co., L. R. 13
Cleveland Wire Cloth & Mfg. Co. 130
Clipper Mfg. Co. 118
*Columbus Conveyor Co. 132
Consolidated Products Co., Inc. 134
Continental Gin Co. 122
Courchesne, Inc., A. 139

Davey Compressor Co. 129
*Daybrook Hydraulic Corp. 144
*Deister Machine Co. 82
Dempster Brothers, Inc. 28
*Denver Equipment Co. 132
De Soto Foundry, Inc. 103
*Dorr Co. 131
Dreifus Co., Charles 140

*Eagle Crusher Co., Inc. 104
*Eagle Iron Works 85
Economy Company 135
Eighmy Equipment Co. 136, 140
Elastic Stop Nut Corp. of America 4
*Ensign-Bickford Co., The 20
Equipment Corporation of America 143
Erickson Special Equipment 126
*Erie Steel Construction Co. 117

Farrel-Bacon 98
Fawick-Airflax Co., Inc. 12
Ford Motor Co. 29
*Fuller Co. 25

Gates Rubber Co., The 18
*General Electric Co. 31
General Machy. & Equipment Co. 134
Gilson Screen Co. 99
Goodyear Tire and Rubber Co. .. 3
*Gruendler Crusher & Pulverizer Co. 143

Haiss Mfg. Co., Inc., Geo. 137
*Hanson Clutch & Machinery Co. 131
*Hardinge Co., Inc. 84
Harnischfeger Corporation 33
*Hazard Wire Rope Division American Chain & Cable Company, Inc. 101
Heidenreich, Jr., E. Lee 133
*Hendrick Mfg. Co. 132
Hercules Powder Co. 15
Highway Equipment Co. 103
Hyster Co. 121

Industrial Plants Corp. 136
*Ingersoll-Rand Co. Outside Back Cover
Inland Equipment Co. 139
International Harvester Co. 37
*Iowa Manufacturing Co. 5
Iron & Steel Products Co. 139

*Jaeger Machine Co., The 123
*Jeffrey Mfg. Co. 36
*Johnson Co., The C. S. 117
Jones Foundry & Machine Co., The W. A. 102
Judd & Son 133

*Kennedy-Van Saun Mfg. & Eng. Corp. 34-35
Kent Machine Co. 119
Koehring Company 26
Kremser & Sons, Inc., Frank A. 136

Latham, A. 139
*Laughlin Co., Thomas 92
*Link-Belt Co. 1
Linn Mfg. Corp., The 130
Ludlow-Saylor Wire Co. ..... Inside Front Cover

Manhattan Rubber Mfg. Division of Raybestos Manhatan, Inc. . 132
Marion Metal Products Co. 86
Marion Steam Shovel Co., The. 10-11
Master Builders Co., The 124
McLanahan & Stone Corp. 129
Mixermobile Company, Inc. 128
M-R-S Manufacturing Co. 17
*Multiplex Concrete Machy. Co. . 126
Murphy Diesel Co. 131

*Nelson Engineering & Construction Co., Victor J. 131
New Holland Machine Co. 87
*Nordberg Mfg. Co. 19

O'Neill, A. J. 140
*Owen Bucket Co., The 144

Page Engineering Co. 89
Pennsylvania Drilling Co. 133
*Pioneer Engineering Works, Inc. 32
Portland Cement Association 130
*Pressed Steel Car Co. 88

*Raymond Pulverizer Div. of Combustion Engineering Co., Inc. 30
Rental Equipment Co. 141
Robins Conveyors Inc. 39
*Roebling's Sons Co., John A. .. 80
Rollway Bearing Co., Inc. 40
Ryerson & Sons, Inc., Joseph T. 90

*St. Regis Paper Co. 8
*Sauerman Bros., Inc. 97
Schaffer Poidometer Co. 93
*Schramm, Inc. 47
*Scientific Concrete Service Corp. 118
Service Supply Corp. 137
Simplicity Engineering Co. 104
*Smidth & Co., F. L. 38
Smith Engineering Works 41
Smith, Inc., L. B. 136
*Smith Company, The T. L. 120
Socony Vacuum Oil Co., Inc. 6-7
Southern Iron & Equipment Co. 139
Sprout, Waldron & Co., Inc. 132
Stanhope, Inc., R. C. 136
*Stearns Mfg. Co., Inc. 105-125
Sterling Equipment Co. 139

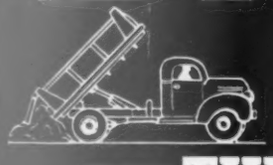
Texas Company, The 45
Thermoid Rubber, Division of Thermoid Co. 43
Tinney Drilling Co. 133
*Traylor Engineering & Mfg. Co. 9
*Tyler Co., The W. S. 130

Universal Atlas Cement Co. 106
United States Treasury 127
*Universal Vibrating Screen Co. . 132
Unverzagt & Sons, G. A. 141
Upson Walton Co. 2

Walsh Co., Richard P. 143
Wellman Engineering Co. 102
*Wickwire-Spencer Steel Co. 14
*Williams Patent Crusher & Pulverizer Co. 100
Willson Products, Incorporated .. 96

***See also Detailed Information in 1945 Pit and Quarry HANDBOOK**

DAYBROOK



HYDRAULIC HOISTS –
STEEL DUMP BODIES
All Sizes — Any Capacity

THE DAYBROOK HYDRAULIC CORP.
BOWLING GREEN, OHIO

TRU·LAY Preformed

(IMPROVED PLOW STEEL)

All-Green Rope stuffed with still longer life!

• Every single strand of TRU·LAY Preformed is literally *stuffed* with American Cable's green lubricant—a high viscosity, leathery substance which adheres to the inner wires and *won't work out.* This means that the many inner wires, which you can't see, are provided with a slip-easy film of oil plus being thoroughly protected against corrosion. And when the wires move past each other without undue friction, and are protected against corrosion, the entire rope structure is benefited. That's why TRU·LAY Preformed *All-Green* rope lasts *still* longer—gives even *better* service. Specify American Cable TRU·LAY Preformed *All-Green* rope for your next line.

ACCO

Wilkes-Barre, Pa., Atlanta, Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Tacoma, Bridgeport, Conn.

AMERICAN CABLE DIVISION
AMERICAN CHAIN & CABLE

ACCO TRADE MARK

In Business for Your Safety

HERE'S A WINNING TEAM

1350 FEET OF DRILL HOLE, EVERY SHIFT, PROVE IT

The combination of two FM-2 Wagon Drills and a K-500 Mobil-Air Compressor helped carve an airport out of solid rock in an unbelievably short time. The rock was of average hardness, yet this team drilled 75 holes every 8 hours—each hole being 18 feet deep.

This total of 1350 feet of drill hole per shift should give you a good idea of the lower drilling costs you can get by putting this team to work.

K-500 Advantages

The 2-stage, air-cooled K-500 Mobil-Air Compressor easily runs two FM-2 Wagon Drills. Equipped with our patented Drill-More Regulator, it provides up to 15% faster drilling and uses up to 40% less fuel to do an average drilling job. Other features are light weight, a convertible engine for operation on either gasoline or oil, a spring mounting and automotive steering.

FM-2 Advantages

The FM-2 Wagon Drill is extremely flexible. Holes can be drilled at any angle and set-up time is reduced. Drill steel feeding pressure from 0 to 1000 pounds is provided by a compact, sturdy air motor. The operator can easily select the right feed for any rock condition. Steel changing time is cut in half and drilling speeds are faster. The sturdy X-71WD Drill used on the FM-2 was developed especially for wagon-drill service. It hits a heavy hammer blow and has a unique follow-through characteristic which overcomes the inertia of long, heavy drill steel.

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y.

5-711

COMPRESSORS · CONDENSERS · TURBO BLOWERS · CENTRIFUGAL PUMPS · ROCK DRILLS · AIR TOOLS · OIL AND GAS ENGINES